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THE

MEDICAL NEWS

A WEEKLY MEDICAL JOURNAL

VOLUME 80^{2}

APRIL - JUNE, 1902

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. 80. NEW YORK, SATURDAY, APRIL 5, 1902. NO. 14.

ORIGINAL ARTICLES.

TREATMENT OF ACUTE PUERPERAL SEPSIS FROM A SURGICAL STANDPOINT.[1]

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THE surgical treatment of conditions arising from sepsis during the puerperium still forms a vexed question. Many hold that, apart from a curettage in selected cases and the opening of purulent collections when these are so favorably situated that they can be incised without entering the general peritoneal cavity, surgery finds no legitimate field in puerperal sepsis. Others, again, lay great stress upon the question as to whether or not there is general infection, maintaining that when general infection exists surgical intervention is worse than useless. I have always been at a loss to understand why sepsis originating during the puerperium should be treated on general principles different from those followed at other times. When the surgeon meets with general septic manifestations attending disease of the gall-bladder, kidneys, appendix, or any other part of the body, he does not, as a rule, hesitate to intervene and attack the *fons et origo* of the disease. It is not a question for him whether or not the bacteria in the blood reach a certain arbitrary number, but it is a question whether he can remove the original focus and breeding point of the bacteria. My attitude has been that surgical interference in acute puerperal sepsis should be based on the same surgical principles. We must dismiss from our mind the rather fossilized idea that general puerperal sepsis portends a fatal issue and precludes any surgical intervention. Cases in which there was no doubt of the existence of general sepsis (or, if you prefer the term, acute septicemia), as shown by the presence of streptococci in the blood, have recovered, some of them after a major operation and some of them without any operation at all. It becomes, therefore, not so much a question as to whether or not general infection exists, but as to the character of the local lesion or lesions and as to the vitality of the patient.

The pathogenic bacteria in puerperal sepsis gain entrance to the body through a wound in the perineum, vagina, cervix or placental site. In some instances, fortunately very rare nowadays, on account of their virulence or of some unknown conditions of the tissues, the bacteria cause no reaction at the point of entrance; they rapidly enter the general circulation, overwhelming the system and bringing about a fatal issue in the course of a few days. Such were the cases of "foudroyante" septicemia of former days.

Of course, surgery is as futile in such cases as it would be under the same conditions if the germs had gained entrance through a small cut in the finger. Leaving these cases out of consideration, I maintain that puerperal sepsis forms a surgical disease just as much as does a septic infection of the hand or any other part of the body. The same general surgical principles should apply to it, modified, of course, by the character of the local tissues affected.

Every one, I think, is agreed upon the advisability of keeping clean and draining an infected wound of the perineum, vagina and cervix. It is the infected wounds of the vagina that are so frequently overlooked and, when detected, are so difficult to drain satisfactorily. I recall the case of a fat woman with a very redundant vagina, in whom infection had taken place through a deep crushed wound extending from a cervical tear on the left side and overlapped by the lateral posterior walls of the vagina. It was not detected until a thorough examination was made by the aid of various specula. The woman was profoundly septic, and it was only by frequent irrigations with various antiseptic solutions, the surface of the wound being exposed by the aid of vaginal retractors, that her life was saved. A vaginal douche given in the ordinary way is absolutely useless in such cases, as it is also in cases in which the infection has taken place in a tear in the cervix. In these wounds of the perineum, vaginal canal and cervix, I am in the habit of first applying the curette so as to remove all ragged edges and the exudate on the wound. I then freely apply pure carbolic acid to the surface and thereafter take means to keep up good drainage, irrigating every few hours with some antiseptic solution. In the presence of these infected wounds of the lower genital canal, the interior of the uterus should be religiously left alone unless there is a clear and imperative indication for interference. If such an indication exist, the greatest care should be exercised not to carry the infection upward into the uterine cavity. It is in the hidden or undetected septic wounds of the vaginal canal that septic phlebitis of the thigh and leg is likely to occur as a complication. The septic wounds of the lower genital canal may also cause lesions higher up, such as pelvic phlebitis and lymphangitis, and not infrequently they give rise to pelvic exudates or pelvic cellulitis which in turn may develop into a purulent collection, the treatment of which we will discuss later.

The interior of the uterus in puerperal sepsis is the most common avenue for the entrance of the pathogenic germs, and the placental site is the point *par excellence* of infection.

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[1] Read before the Section on Obstetrics of the Academy of Medicine, Nov. 29, 1901.

We frequently meet with cases of uterine sepsis which do not progress favorably in spite of curettage, intra-uterine injections and the most approved plan of general treatment. The temperature persists, the pulse remains rapid, and it is evident that the patient is losing ground; or the patient after a time apparently passes into convalescence, but is soon seized with a recurrence of chill, high temperature and accelerated pulse. A short time since I had under observation a patient who, on two different occasions, when she seemed well enough to be discharged from the hospital, was taken with chills and high fever. A thorough pelvic examination was negative; the uterus was perhaps a trifle large, but no other abnormal condition was found. I felt confident that a suppurating lesion existed either in the uterus or adnexa, consequently after due deliberation I opened the abdomen and to my chagrin I could find nothing abnormal save the left ovary, which was edematous and double the usual size. I removed it and closed the abdomen. Of course, the fever persisted until a few days later, when a quantity of pus was passed with the urine. The temperature now rapidly fell to the normal, the patient was convalescent in a short time and has remained well ever since. It is evident that I was right in my supposition, but the pus focus was situated in the anterior wall of the uterus below the reflexion of the bladder peritoneum, and thus escaped detection even with the abdomen open and the uterus explored with the aid of sight.

This case is illustrative of one class of cases in which we are justified in opening the abdomen and shaping our line of action by the conditions revealed; but in adopting such a course we must feel reasonably sure of our ground. In another case, observed about the same time, which ran a somewhat similar course, I could make out a thickening of the right iliac vein by bimanual examination and concluded that any operative interference would be unjustifiable. The patient finally got well after a very tedious illness, but without presenting any other local lesions.

There is another class of cases of uterine sepsis in which the question of hysterectomy has to be entertained. The patient has a septic endometritis or adherent placental tissue which has become infected. She has been curetted and treated in a proper manner, but the pulse and temperature remain high, the pulse probably being out of proportion to the temperature. On examination we find a large flabby uterus and nothing else in the pelvis to account for the unfavorable progress of the case. If the pulse persistently remain above 130 and local and general treatment is ineffective, we are justified, in my opinion, in opening the abdomen and removing the uterus unless, after opening the abdomen, we find some condition to change our plans. For instance, on opening the abdomen we might find a small abscess outside of the uterus which had escaped our examination and which probably was the cause of the continued sepsis.[1]

Within the past few years many who bitterly opposed hysterectomy for puerperal sepsis have modified or changed their views. It is now generally agreed that it is a justifiable procedure in certain cases, but many still hold that it is almost impossible to formulate the indications. From the very first time that I have treated the subject I have been keenly alive to the difficulties of formulating the indications for so radical a procedure. Increased experience has not lessened them. Each case must be carefully studied by itself. I have never had the courage, with but a single exception, to resort to hysterectomy without a careful personal observation of the case for twenty-four hours or longer. The exception was formed by a case with a partial inversion of the uterus with adherent placental tissue in a state of putrid decomposition. The patient was in a bad condition, having been deeply septicized since her delivery, nearly three weeks before. Although a major portion of the uterus, turned inside out, lay within the vagina, it was impossible to tell which was placental and which was uterine tissue. I removed the uterus piecemeal *per vaginam,* the technical difficulties being very great, as can readily be conceived, from the loss of the usual landmarks. The patient made a good and smooth recovery. The case presented a striking refutation of the statement frequently made that it is always possible to peel off adhering placental tissue with the finger or with the curette. My first case of hysterectomy for puerperal sepsis presented just such a condition. I was unable to remove the placental tissue with the curette while the uterus was *in situ*, and after the uterus was removed and cut open I was unable to peel it off with the fingers. Nevertheless, I was severely criticized at the time for my procedure, and to this day we hear echoes of that criticism.

I have never been able to comprehend the attitude of some of the opponents of hysterectomy for acute puerperal sepsis. Many of them are operators who do not hesitate to remove the uterus for chronic metritis and for what is vaguely termed cirrhosis of the adnexa, conditions which certainly are not a menace to life. But to rob a woman of her uterus when she is suffering from a disease which places her life in jeopardy is considered by these surgeons almost a crime. What logic! What consistency! After considerable experience in this direction, in whatever else I may be in doubt, in this I am not: no woman's chances of recovery have been lessened by my intervention of removing the uterus. A large percentage of the patients recovered, and in those who did not recover the sepsis simply progressed as before and the patient lived apparently as long as she would have done had the uterus not been removed. Let me not be misunderstood. No one can feel more strongly than I the responsibility of removing the uterus and adnexa from a woman who is under forty years of age. This sense of responsibility has often made me guilty of hesitating and waiting until too late. As I look back upon some of the fatal cases that I have observed during the past two years, I feel morally certain I could have saved some of the patients had I been less solicitous of preserving their sexual functions.

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[1] In the discussion following the reading of the paper one of the speakers severely criticized the writer for the clinical way in which he treated the indications. The speaker gave his own very scientific method, which consisted, he said, in making blood examinations and *when bacteria were found in the blood he operated!* Certainly no one excepting perhaps the patient could find fault with the scientific accuracy of that method and it does not detract from its value as an accurate method by the circumstance that the patient invariably dies; according to the speaker's own frank admission all the cases operated on by him for acute puerperal sepsis have ended fatally.

In this connection it is well to reflect upon a feature frequently lost sight of in the discussion of this topic. We all hear of and see cases of severe uterine sepsis which recover apparently without any major surgical operation. Some of the patients remain well for an indefinite time. Others again, and the percentage is larger than is generally known, remain well for only a very short time. They fall into the hands of other operators, who find it necessary to do a radical operation. I will briefly cite one case in example. Over a year ago I was called in consultation to a case of severe uterine sepsis. I had the patient transported to the hospital for the purpose of observation and of performing hysterectomy if necessary. For several days her condition varied and more than once I was on the verge of interfering radically. But in the course of two weeks she showed manifest improvement; the uterus became smaller and her temperature was normal for several days. I began to look upon the case as an object lesson on the value of conservatism and perseverance in palliative measures. She left the hospital somewhat sooner than I desired; two weeks later I was again called to see her. She had had a return of chills and fever and I found the whole pelvis filled with a hard exudate in which it was difficult to map out the uterus. During her stay in the hospital there was not a trace of any exudate or any trouble with the adnexa. The woman remained very ill for a long time, was seen by many consultants and finally was subjected to a radical operation. All the poor woman gained by my solicitude for her sexual organs were months of great suffering, anxiety and heavy expense. I have seen several similar cases.

In a very small number of cases of uterine sepsis the infection spreads to one or the other tube, setting up a violent grade of salpingitis. This may occur at a time when we have reason to believe that the uterine sepsis has subsided. When such a contingency arises, it is, in my opinion, good practice to open the abdomen without delay and remove the affected tube. I reported a case of this kind a few years ago. I think I may venture the opinion that by my timely intervention I probably saved the woman's life. I certainly saved her from a long illness and probable destruction of the adnexa of the opposite side through the extension of the septic inflammatory process. This woman has remained well and has since given birth to a child. In these cases immediate surgical intervention constitutes, I think, the highest form of conservatism or conservation of the woman's sexual organs.

When a uterine infection travels through the walls of the uterus and sets up a septic peritonitis, as it not infrequently does, we are justified in opening the abdomen and treating the case as one of septic peritonitis from any other cause. Irrigating and draining the peritoneal cavity would constitute the entire treatment in the minds of many operators. Having opened the abdomen, it seems to me, if the patient's condition permit it, the removal of the uterus, the *fons et origo* of the infection, and draining through the vagina, would give the best chances of a cure. I was able to save one patient by this procedure and I am not aware of any having been saved by mere irrigation and drainage. Of course, if gynecologists will operate in these cases when the patient is *in extremis* they will be doomed to disappointment and will bring only discredit to the operation.

In a large percentage of cases of puerperal sepsis starting from a wound in the vagina or cervix or from the interior of the uterus, large exudates will form in the pelvis or lower part of the abdomen. Some of these disappear entirely, but the largest number suppurate and break down into one large abscess cavity or, as is more frequently the case, into several purulent foci separated from each other by areas of exudate of considerable thickness. These cases come more strictly under the heading of chronic infection and do not rightly belong to my theme. Some of them, however, run a very acute course and unless promptly treated terminate fatally.

Every one is agreed that when pus is present free exit should be given to it and whether it is done through a vaginal or abdominal incision will depend upon the situation of the purulent collection. But whether we always do the best for our patients by remaining contented with mere incision and drainage is a question upon which considerable doubt has been cast in my mind by some experiences I have had during the past year. This, however, would open up a topic which would carry me far beyond the limit of my paper.

The points upon which I desire to lay especial stress are as follows:

1. Every case of puerperal sepsis is wound fever or wound infection and should be treated on the same general surgical principles applying to wound infection elsewhere.

2. Each case of puerperal sepsis, no matter how slight, should be carefully observed and watched from the outset, for we can never tell whether such a case may not develop into a serious infection which will be a menace to life.

3. When a case of uterine sepsis progresses unfavorably after curetting, irrigation and proper general treatment, as evidenced by the pulse, the temperature and the condition of the uterus, we

are justified in opening the abdomen and removing the uterus, unless, after opening the abdomen, we find some condition outside of the uterus to account for the persistence of the sepsis, or if we find some condition in the uterus itself, as a single intramural abscess or a localized gangrene, which would admit of removal without ablation of the whole organ, as in cases reported by Hirst and myself.

4. When a uterine infection extends to a tube or ovary, setting up a violent grade of salpingitis or ovarian abscess, the abdomen should be opened without delay and the affected tube or ovary removed.

5. When a uterine infection sets up a septic peritonitis the abdomen should be opened and the uterus ablated, the peritoneal cavity flushed with saline solution, and free drainage employed through the vaginal opening.

6. To operate for these conditions when the patient is evidently moribund is unjustifiable and can serve only to bring discredit upon the profession and upon the operation.

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LEUCOCYTOSIS AS A POINT OF PROGNOSIS IN APPENDICITIS.[1]

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It is only within a comparatively short time that surgeons have begun to realize how much valuable information in the fields of diagnosis and prognosis can be obtained from an examination of the blood. Although the student of internal medicine long ago learned to attach much importance to the facts disclosed by such examination, the surgical side of the profession has maintained a rather indifferent or even skeptical attitude, assuming that data obtainable by other means at their command were sufficient to guide them in the management of their cases; they have regarded blood-work as something good enough in its place and probably of use to physicians, but unnecessary to the more or less skilful surgeon. As the result of this indifference, it has happened that hematology has occupied a place of minor importance in relation to surgical cases; and, too, the wide variance in the conclusions reached by the few investigators along surgical lines has had a tendency to throw discredit on the procedure as a whole. Yet enough has been done to remove all doubt as to how fruitful a field is offered for the investigation of the surgeon.

It seems to us to be the duty of all who have been making observations on the blood in its relation to surgical practice to place their results before the profession, in order that from a constantly-increasing number of facts progressively accurate conclusions may be drawn for future guidance. We therefore propose to offer the results of certain observations on the leucocyte-count as a point of prognosis in appendicitis, as noted in cases in the Calumet & Hecla Mining Company's Hospital from March, 1898, to November, 1901. We hasten to disclaim in advance any originality in our work, being well aware that many others have made and recorded similar observations; it is, as we have just stated, only for the sake of increasing the sum total of data relating to the subject that we submit our results.

It should be borne in mind that this article has to do only with the leucocyte-count as a point of *prognosis in appendicitis.* Undoubtedly, it has a value in other surgical diseases, but, as our observations have been most extensive in cases of appendicitis, we exclusively confine ourselves to this. Of its diagnostic value, likewise, we shall not now speak; that it has such a value, positive and definite, we consider to be now well established. Possibly too much has been claimed for this diagnostic value, and therefore, with some justice, experienced surgeons have resented the claims made for the new procedure, which, as was maintained by some, would supersede other means of diagnosis. But in the depreciation of its diagnostic value, surgeons have overlooked its value in prognosis and it is this phase of the subject that we here discuss.

The practice of making leucocyte-counts in appendicitis patients in the Calumet & Hecla Hospital was inaugurated in March, 1898, by Dr. E. H. Pomeroy, then chief of the hospital staff, who received from Dr. Cabot the suggestion that constituted our working foundation: "A high or increasing leucocytosis indicates a case of increasing severity, a low or diminishing count points to lessened severity." From that time the leucocyte-count has been a matter of routine in all cases of appendicitis, the number of counts made in each case varying from one to a dozen or more. As might be supposed, the early conclusions drawn from these counts were somewhat indecisive; but as the number of cases and of counts multiplied, our inferences assumed more definiteness, until they crystallized into a certain code which is now practically our guide of action in appendicitis cases and which we shall presently elucidate.

Our general principle is this, which is practically a reiteration of the dictum with which we started: The degree of leucocytosis is an index of the severity of the case; a high stationary or an increasing leucocytosis indicates a progressively serious case which demands immediate intervention; a decreasing leucocytosis, save in some exceptional cases, very few in number, to which special reference will be made, points to a case of decreasing severity in which operation *may* be safely delayed if for any reason it be so desired.

This cardinal principle is the result of our observations in 124 cases of which we have hospital records and probably as many more externe cases of which no records are at hand. It is the result of this experience alone. Given the dictum to start with, we have worked out its truth for ourselves, with certain modifications and additions. We can cite no principles in its support, but base our belief in its correctness, as we confidently do, solely on experience.

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[1] From the Hospital of the Calumet & Hecla Mining Company.

Two things should be noted in this connection. First, we do not depend upon the leucocyte-count as an indication of the presence or absence of pus. Numerous observations on this point have been reported, and the conclusions show much variance. Now to us the presence or absence of pus seems an entirely unnecessary consideration. Pus does not kill; the damage is done by germs and their toxins which, in the course of their existence, stimulate the production of pus. The important thing to know in any given case is not whether there be pus present, but whether the morbid process be one of progressive virulence, in which the formation of pus, as a subsidiary incident, may have already occurred or may soon take place. Long before the period of pus formation there already exists, in many instances, an exceedingly dangerous condition; how important, therefore, to anticipate this dangerous condition, if it be possible, and check by an operation the virulent affection before the danger point is reached. Second, we keep aloof from the abstract proposition as to whether or not every case of appendicitis should be operated upon as soon as a diagnosis is made, although personally we believe that a patient affected with the disease should have an operation *as early as his case demands it and as the circumstances permit.* Undoubtedly there are cases which must be operated upon promptly in order that life may be saved; undoubtedly, too, there are others in which operation can be safely postponed. The question to determine is to which class any given case belongs. We understand thoroughly the truth of the proposition, so strongly insisted upon by surgeons, that no one can say at the beginning of any given case of appendicitis whether it will be mild or severe; but our observations on leucocytosis have led us to the conclusion that the blood-count furnishes a trustworthy indication as to the class in which each case, as it progresses, may be placed. It keeps us informed as to the progress of the disease; it gives us at any time in the course of the attack positive information as to whether the process be getting milder or more virulent, whether it be tending toward recovery without operation, or whether its seriousness be increasing to the point where an operation is demanded in the interests of the patient; and it gives us this information promptly enough to enable us to intervene if intervention be necessary. Leucocytosis gives us information as to whether the case may safely, so far as the existing attack is concerned, be treated medically, or whether surgical measures be essential.

We can best elucidate our proposition by stating briefly our usual procedure when called to a case of appendicitis. It may, however, be well to explain first that the medical and surgical service of the Calumet & Hecla Mining Co. is practically free to its employees; that consequently they are in the habit of summoning a physician very promptly in any case of sickness, more so than would probably be the case in general practice when motives of economy might sometimes have an influence. As a consequence, we have an opportunity to observe most of our cases of appendicitis from the very first symptoms; and even those to which we are tardily called serve to strengthen our belief in our main proposition, as we shall explain later on.

When called to a case that presents the appearance of appendicitis, we make the usual examination and get the essential points of the history. If the signs, symptoms and history tend to establish a diagnosis of appendicitis, we at once made a leucocyte-count, and upon the result of this count much of our future conduct of the case depends. If this count be high, say above 16,000, and the symptoms of the case considered by themselves would be called severe, we urge an immediate operation. We consider that we have to do with a serious case which *may* at any time pass beyond the possibility of successful operative relief. If the count be between 13,000 and 16,000, and the symptoms moderately severe, we tell the patient that we recommend an operation; but if any strenuous objection be made, or the circumstances be unfavorable for operating, we say that we are willing to observe the case for a short time longer before deciding definitely. We then make another blood-count in from four to eight hours; if this count be materially higher than the first, say by 1,000 or more, we consider that the case is assuming a more serious aspect and insist upon immediate operation. But if the first count be less than 16,000 (supposing that we have seen the case from the very beginning) and the second does not show any increase, nor do any subsequent counts during the next forty-eight hours, our feeling is that we have to do with only a mild case in which the prognosis without operation is good for this particular attack. It is our practice, nevertheless, to operate on such cases in the first attack if possible, and thereby free the patient once for all from the danger of subsequent attacks; for our experience teaches us that if he pass successfully through one seizure, he is very apt to decline an interval operation, and will have nothing done until a second, and possibly less favorable, attack forces the issue. If, however, the patient or his friends demur, or if the conveniences for operation are not at hand, we do not strongly insist, being confident that the attack, with the continued low count, will terminate favorably. If the symptoms of a case be mild throughout and show no tendency to become severe, we still observe the leucocyte-count; if this remain low, we give ourselves no anxiety as to the outcome. Having once recognized the case as appendicitis we always recommend operation, but do not insist upon such immediate action as we would if the blood-count showed a decidedly upward tendency.

Now suppose that in any given attack the usual signs and symptoms appear to indicate a marked diminution in its severity. If the first count be moderately high, say from 12,000 to 16,000, and the second or any subsequent count show a rise of say 2,000 or more, especially if there be an apparently continuous rise, we urge immediate operation, *regardless of the fact that the clinical symptoms appear to show improvement.* As this is a very important point in our proposition we should go into it more fully. Suppose, when first seen in the afternoon, our patient presents symptoms of appendicitis of moderate severity. There has been some vomiting, there is a temperature of 101° F., pulse 100, moderate rigidity of the recti, considerable subjective pain which is increased by pressure over McBurney's point—in short, symptoms of a moderate case. We take a blood-count and find it to be 14,000. Eight hours later the symptoms are the same and the leucocytes have remained at practically the first figure. Next morning the symptoms have materially modified; the temperature and pulse are lower, pain is less and, most of all, the patient feels much better. Ordinarily, without the count, we would say that the patient was improving and the attack would terminate favorably without an operation. But our count at this time shows 17,000. We count again in two or three hours and find it still increasing. At this point, no matter what the subjective feelings of the patient may be, no matter if his symptoms have entirely disappeared and there has come a feeling of perfect well-being and freedom from pain, we insist upon immediate operation. In such an instance we operate solely on the basis of the leucocyte-count, regardless of all other indications, and our experience, as we shall show in detail later on, seems to justify us in so doing.

There is another class of cases, fortunately very few in number, and for the most part easily recognized, in which a falling leucocytosis is a bad omen. They form a class parallel with those in which a falling temperature, far from being a favorable sign, indicates approaching dissolution. In both instances the concomitant symptoms are sufficient to render an error practically impossible. We refer to those cases to which we are called on the third or fourth day, or later, in which there is a history of a very severe attack and in which we find the patient practically in collapse; the even moderately-practised eye readily perceives that his condition is most serious, and that the apparent freedom from pain which often exists is but an ominous lull evidencing an increasing toxemia. It is a fact recognized by hematologists that it is only (speaking somewhat loosely) when an effort is being made by Nature to overcome disease that we find an increasing leucocytosis, and *per contra,* when from an ever-increasing toxemia Nature is forced to give up the struggle, there may be a progressive fall in the blood-count. In this class of appendicitis cases, seen at a late period in their course, with a progressively-falling leucocytosis, the general conditions would be such that even the inexperienced could not be misled; and the lowering count would rather confirm than confuse if the point mentioned be borne in mind.

There is still another and somewhat puzzling class of cases, those to which we are called on the second and third day and in which we find a moderate leucocytosis, say 12,000 to 14,000, and moderately-severe clinical symptoms, subsequent counts at intervals of a few hours showing no material change. In such cases we have found it safer to insist on immediate operation. We are handicapped by not knowing what the count was during the first twenty-four or forty-eight hours. Under these circumstances, neither the clinical symptoms nor the count showing any improvement, though neither be specially severe, we have found it safer to operate, and in some instances we have found that intervention could not safely have been omitted.

So far as our principles can be put into tabular form they are somewhat as follows:

First Observed Symptoms.	Leucocytosis.	Procedure.
Moderately severe.	High, say over 16,000.	Operate promptly.
Moderately severe.	Moderate, say from 12,000 to 16,000, but increasing on subsequent count.	Operate at once.
Moderately severe.	Moderate, but decreasing on second and subsequent counts.	Operation advised, but may be postponed with safety.
Moderately acute at first, but becoming less severe.	Moderate and decreasing.	Operation recommended but not insisted upon.
Moderately acute at first, but becoming less severe.	Moderate at first, but showing decided increase.	Operate at once.
Very severe and so continuing; following a history of severe onset, and with signs of increasing toxemia.	Moderate and decreasing.	Operate at once as the only chance.
Moderately severe, case not being seen until 48 hours or more after commencement of attack.	Moderate and stationary.	Operate promptly.

The figures given as indicating the varying degrees of leucocytosis are entirely arbitrary, but represent as well as figures can the standards that we have come to depend upon as the result of our experience. We recognize the absurdity of attempting to lay down a set of hard and fast rules that would be applicable to every case and to every surgeon as a guide of action in appendicitis. It would be manifestly absurd to assert arbitrarily that when the leucocyte-count rises above 16,000 one should operate, or that if it fall below 14,000 all danger is past. The determination of what may be called the danger line must come from personal experience and observation. In our own hospital, indeed, the standards of leucocytosis vary from year to year as our experience widens. More important than any exact figures is the establishment of a system on which one teaches one's self to have a certain reliance. The general principle we believe to be entirely trustworthy; the figures given represent our standards; they may very properly be modified by other observations without at all assailing the truth of the underlying principle.

During the period in which we have been making our observations on leucocytosis as an aid to prognosis in appendicitis there have been treated in the hospital 124 cases in which we have records of the blood-count; probably as many more have come under our observation outside the hospital. During the first part of the period, when the principle was new, less dependence was placed upon it than at present; but for the sake of completeness the whole time is here included. To all these cases were the principles applied that we had laid down, and the results have been ample to justify us in having the confidence that we do in the value of our observations. The subsequent progress and outcome of all the cases demonstrated that the principle of leucocytosis could be depended upon; that is to say, in all of them that were operated upon, 110 in number, the condition of the appendix demonstrated that the operation was indicated. We do not mean by this that the operation showed that every case operated upon would have terminated fatally without intervention; we mean that a condition of the appendix was disclosed that showed the intervention to be warranted and essential to the patient's welfare. In the cases that survived operation, as most of them did, a subsequent history of freedom from the symptoms that had previously led to the diagnosis of appendicitis shows that the cause of the trouble was removed by the operation. It is probably true that the majority of these cases would have been operated upon without reference to the blood-count, since the clinical symptoms were sufficient to warrant it; but this in no way diminishes the value of the count as an indicator; since this corresponded in every case to the morbid condition found. But *many of the cases were promptly operated upon which would not have been so treated had not the count been in evidence;* these were cases in which for various reasons we would have been glad to delay operation for the time being and to treat "medically;" but the count decided the question and led to a prompt intervention which, in some cases at least, undoubtedly led to a saving of the patient's life.

Fourteen of our cases, owing to various reasons, were not operated upon. The nature of the blood-count throughout their respective courses made us confident of a favorable outcome without operation so far as each particular attack was concerned; and in none of them were we misled, since all progressed to recovery. Had the count at any time indicated a more serious condition, operation would have been insisted upon. These cases, it is true, were treated "medically;" but with the medical treatment was associated a prognostic point that enabled the surgeon to assure himself from day to day, and even oftener, that the cases were progressing favorably, a feature that the "medical" treatment of appendicitis has usually lacked.

Eleven of our cases died. It is not within the province of this article to discuss the causes of these deaths; but some of them are interesting in their relation to our main point, *viz.*, the value of leucocytosis as an indicator of the patient's condition. To five of the fatal cases the physician was tardily called, on the third day or later, and found the patients already *in extremis.* It is fair to suppose that had these been seen earlier, and had the leucocyte-count been watched operation would have been performed in time and the patients saved. In another case the count indicated that an operation was demanded, but the patient declined it; subsequently giving his consent, it was found that the accepted time had passed, and the operation was unavailing. At any rate, so far as our point is concerned, the deaths prove nothing one way or the other; while at the same time the entire series of cases has convinced us that as an indicator of the intensity of the morbid condition the blood-count is to be relied upon.

Space does not permit our citing cases in detail to illustrate our points, but brief mention of a few will help make our proposition clearer. The following four cases were what would clinically be said to be of average severity, yet not with such severe symptoms but that a physician who was inclined to treat appendicitis conservatively would probably have delayed operation for one, two or three days. The blood-count indicated the necessity for immediate intervention and the issue showed this to be the wise procedure in each instance.

Case I.—Edward M., aged twelve years, first seen November 17, 1899, at 3 P. M. Had been complaining in the morning of pain in the lower part of the abdomen; vomited twice during the day. Tenderness and marked rigidity over McBurney's point; temperature 100° F., pulse, 80. Leucocytosis, 21,000. Patient was again seen at 7 P.M. The clinical symptoms were the same as before, but leucocytosis had risen to 23,000. Immediate operation performed. The appendix was found to be greatly thickened and enclosed in a mass of adhesions and at the distal end firmly wrapped in a portion of the omentum. Distal end greatly distended and on the point of rupture.

Case II.—Ernest A., aged twelve years, first seen September 23, 1899, at 9 P. M. The previous day patient had had some pain in the abdomen, but had not gone to bed, and on the day first seen was up and about the house until 5 P.M. Abdominal muscles extremely rigid and tenderness particularly marked over the appendical region. Temperature, 100° F., pulse, 78. Leucocytosis, 21,000. Immediate operation performed. Appendix was found without difficulty and seen to be much distended and on the point of rupture.

Case III.—Matthew G., aged twenty-one years, first seen at 10 A.M., May 31, 1900. Patient had been taken ill during the previous night with vomiting and general abdominal pain. Temperature, 101° F., pulse, 100. Pain and tenderness in the region of the appendix. Leucocytosis, 17,850. Patient seen again during the afternoon of the same day; clinically no change except that the tenderness was more localized and more marked; leucocytosis, 18,050. Operation advised in view of the increasing count. Distal end of appendix was buried in a large mass of omentum, the remaining portion being very firmly fixed by adhesions. Omentum containing distal end was resected and the appendix then removed in the usual way. Upon opening into the omental mass it was found to be filled with pus which had escaped from the ruptured appendix.

Case IV.—John C., aged twenty-one years, first seen in the afternoon of June 3, 1900. Patient had for some months been troubled with attacks of colic and spells of vomiting, but had never been confined to the bed. The present attack began on the night of June 2d, when he was seized with the usual attack of colic and vomiting to which he had been subject. He became steadily worse until the following afternoon when the physician was called. At this time the pain was very intense in the right side of the abdomen, where there was extreme rigidity. Temperature 101° F., pulse, 118. Leucocytosis, 19,950. Operation was advised, but refused. The following morning the pain was as marked as on the preceding day and the rigidity extreme. Pulse and temperature were the same; leucocytosis, 25,000. Operation was again advised and this time accepted. Proximal end of appendix was non-adherent; distal end freely movable but enclosed in a mass of omentum as in the preceding case. Omentum resected and appendix removed in the usual way. Distal end of appendix which was buried in omentum contained a large concretion. Walls of appendix markedly ulcerated and very thin.

If in any of these cases we failed to follow out our policy of immediate intervention in the presence of a high count, it was due to the fact that we were deterred either by the refusal of the patient to submit to operation or to some other untoward circumstances. Left free to act as we wished, intervention would have been undertaken promptly in each case. The following cases were milder still, clinically speaking, but leucocytosis pointed to a serious condition, and operation in each case showed the deduction to be correct.

Case V.—Anthony W., aged eight years, first seen August 9, 1899, at 4 P.M. Had been taken sick that morning with vomiting and colic. Temperature, 99° F., pulse, 80. No abdominal tenderness and no frank symptoms of appendicitis. Next day the temperature and pulse were the same, but there was slight tenderness over the appendix; leucocytosis, 24,000. Immediate operation, which disclosed an appendix deeply buried in adhesions which were with difficulty broken up. The appendix was much distended with foul-smelling pus and at one place was on the point of rupture from ulceration.

Case VI.—Miss G., aged twenty-four years, first seen August 12, 1899, at 9 P.M. Patient stated that she had been taken sick the night previous with severe abdominal pain; had had no vomiting; pain had been relieved by an opiate and patient was up the next morning. At the time she was first seen by the writers, August 12th, there was some pain and tenderness over the entire abdomen, slightly more marked over McBurney's point. Leucocytosis, 24,000. Operation was advised and declined. The day following the temperature was 99° F., pulse, 90; pain and tenderness about the same; leucocytosis, 16,000. The third day the symptoms were the same, but the count had risen to 26,000. Operation was strongly advised and accepted. On opening the abdomen the appendix could not be found; the cecum was accordingly brought into the wound with a portion of the ileum, and the gut was found to be folded upon itself with walls firmly adherent, the pocket thus formed enclosing the appendix; the walls of the intestine forming this pocket were gangrenous; the entire portion was therefore excised and an end-to-end anastomosis was made with a Murphy button.

The most instructive points in the last two cases are the very mild symptoms accompanying such severe conditions in the abdominal cavity, and the fact that the leucocyte-count was the only criterion which could be followed with any degree of safety to the patient, at least by anyone who was inclined to be conservative. These cases would almost certainly have been treated medically by anyone who recognized such treatment as ever permissible. Still more forcibly does the following case illustrate the value of the count in pointing to a serious condition when every clinical symptom pointed to the patient's having practically recovered from the attack.

Case VII.—Sister A,. first seen May 10, 1899, when she presented the symptoms of a rather mild attack of appendicitis. Temperature, 102.5° F., pulse, 140, leucocytosis, 16,000. The following day the clinical symptoms, mild at first, were even less severe. Temperature, 100° F., pulse, 112, and the idea of an operation was practically dismissed. The following day her temperature was normal, pulse 90, and so far as the feelings of the patient and the clinical symptoms were concerned the case was practically terminated; but a count was taken and a leucocytosis of 21,000 disclosed. On the strength of this count immediate operation was insisted upon. The appendix was found tense, full of pus, and without any adhesions to indicate the slightest attempt of Nature to wall off the purulent mass. The appendix had become so thin at one point that after the operation, as the surgeons were preparing to open it for examination, it burst before the knife touched it, and was seen to be so thin at the point of rupture as to make it perfectly evident that had it not been removed when it was it would certainly have ruptured into the abdominal cavity within a couple of hours, sacrificing the patient's life; as it was, she made an ideal recovery.

The last case is the best illustration we can offer as to the value of the count in cases that clinically seem to be progressing to recovery; and it is in just such cases that it is especially valuable. There is another class of cases in which it may be desirable to postpone operation if it be possible and in which the count enables us to do so with a feeling of security. We have had several cases which we might use to illustrate this point, but space permits of our citing but a single one.

Case VIII.—Mrs. W., first seen at 4 A.M., July 13, 1901. At about 10 P.M. the previous evening the patient noticed general abdominal pain which she attributed to colic. Though not previously constipated she took an enema in the hope of relief. The bowels moved freely, but the pain continued to increase during the night, and when first seen at 4 A.M. she complained of its being general over the abdomen. Palpation revealed a very rigid right rectus and extreme tenderness on pressure over McBurney's point; temperature, normal; pulse, 80. At 7 A.M. a blood-count was made and the leucocytosis found to be 14,000. At 1 P.M. a second count showed a rise to 15,150. At this time an operation was plainly indicated and was proposed. For personal and family reasons which need not here be stated, the patient was very anxious to postpone operation if it could possibly be so arranged; we therefore adopted a waiting policy, much against our better judgment. At 7 P.M. the temperature had risen to 101° F., pulse to 104. A count made at this time showed a still further elevation to 18,000, and it was then decided, in spite of the patient's objections, that if the next count did not show a decrease we should proceed to operate. A fourth count was made at 11 P.M., and showed a slightly lessened leucocytosis of 17,500. Patient at this time was not suffering so much pain nor was tenderness quite so marked. The following morning the clinical symptoms were improved, and leucocytosis was still further diminished to 12,500. The following afternoon the count was 12,000; the patient was entirely free from pain and there was but slight rigidity of the rectus. The following day the count had fallen to 8,450, after which there was no further elevation, and the patient recovered rapidly. It is true that in this case we were running rather close to the danger line; yet the general course of the count made us reasonably confident that we were committing no error in warding off an operation.

Now, as to the value of this prognostic point to the general practitioner. On the one hand it furnishes a danger signal to that class of physicians who are inclined to treat their cases of appendicitis expectantly, and in this class we suspect are to be found a very large number of the profession. The leucocyte-count, properly interpreted, will give them information as to when their conservative methods can no longer be followed with safety, and furnishes a most trustworthy index as to the real condition of the patient, whatever his signs and symptoms may appear to show.

On the other hand, no matter how strong an advocate of intervention the attending physician may, on general principles, be, it is a fact that there frequently occur cases in which the avoidance of an operation is very desirable. We remember to have had a letter some months ago from a surgeon of wide experience with appendicitis (Dr. R. T. Morris) in which he stated that he had not made use of the blood-count because when once he had diagnosed a case he operated promptly without permitting any excuse or delay. It may be well in theory to adopt such a course of action, but practically many things may interfere with its successful execution. The bad environment of the patient; personal, private and business reasons on his own part or that of his family for desiring to avoid the risk of an operation, however slight; pregnancy or recent childbirth; the presence of some other disease; business engagements which would render prolonged detention at home a calamity; any of these reasons, as well as many others which the practitioner can readily supply from his own experience, may make it extremely desirable that an operation be avoided for the time being. Then, too, appendicitis is not confined to the cities, where the facilities for properly handling it are more easily obtainable; it flourishes vigorously in country districts as well, and no one understands better than the country practitioner the difficulties that stand in the way of immediate operation for appendicitis. The lack of conveniences and of necessary assistants, especially in sparsely-settled communities, make such immediate operation almost impossible. It is in such cases as these that the value of the leucocyte-count is most marked. Although we recognize fully the truth of the proposition that has been enunciated by our leading surgeons until it has become axiomatic that at the beginning of a case of appendicitis no one can say with assurance how it is going to end, yet our experience with our series of cases has taught us that a close observation of the leucocyte-count suffices to keep us accurately informed as to the progress of the case from day to day or even from hour to hour. If the tendency of any given case, as shown by the count, be such that an operation is demanded, then an operation may be insisted upon regardless of circumstances; otherwise—that is, if the count indicates a lessening severity—operation may be safely deferred, if conditions or circumstances render a postponement desirable. An observation of the leucocyte-count does not imply that no operation will be performed; it merely means that in those cases in which we wish to avoid operation we will intervene if obliged to, and while awaiting the necessity will prepare for it; but if the leucocyte-count remain low we may let the case proceed without operation, confident that the outcome will be favorable.

Summary.

1. The leucocyte count is a valuable aid to prognosis in appendicitis.
2. This is distinct from its diagnostic value.
3. A high stationary, or an increasing, count indicates a morbid condition of increasing severity which demands operation, no matter what the clinical symptoms may be.
4. A low stationary or decreasing count indicates that the severity of the case is abating and that operation may be safely postponed. Cases in which a falling count is accompanied by unmistakable signs of a generally bad condition form the rare exception to this second principle, and in them there is no chance of error.
5. No arbitrary set of prognostic values to be assigned to various degrees of leucocytosis can be constructed. The important point is to follow any scheme in which one learns to have confidence, provided the essential principle be preserved.
6. The count indicates when operation should be performed for the best interests of the patient.
7. Circumstances often render it desirable to postpone operation in appendicitis. Study of the blood-count enables it to be determined whether this may be done with safety and often renders such postponement permissible.

THE PNEUMATIC PROCTOSCOPE.

BY JAMES P. TUTTLE, M.D.,
OF NEW YORK.

In examinations of the rectum and sigmoid, surgeons have frequently met with certain obstacles which prevented complete diagnosis. The securing of a proper light was first overcome by the introduction of reflectors and finally by the electric lamp. The examination of the upper limits of the rectum and sigmoid was accomplished by the introduction of the Kelly tubes and the application of atmospheric inflation to the rectum. In order that these methods may be successful two things are necessary: (1) The patient must be maintained in the knee-chest posture; and (2) the gut must be inflatable by the force of atmospheric pressure. The knee-chest posture is not only embarrassing, but very tiresome to most patients, and retention in this position sufficiently long to permit a complete examination is in many cases almost impossible; while in a certain number of cases atmospheric pressure either fails entirely to dilate the rectum or ceases to act about the juncture of the rectum and sigmoid, and therefore examination above this point is practically limited to the surfaces of the gut which collapse over the end of the sigmoidoscope.

Efforts to overcome these difficulties have been made at various times and with greater or less success. The Pennington, Laws and Beach tubes are all ingenious instruments devised for these purposes, but are open to certain minor objections which the present instrument is intended to overcome. The writer is indebted to all these gentlemen for their useful suggestions in the perfection of this instrument.

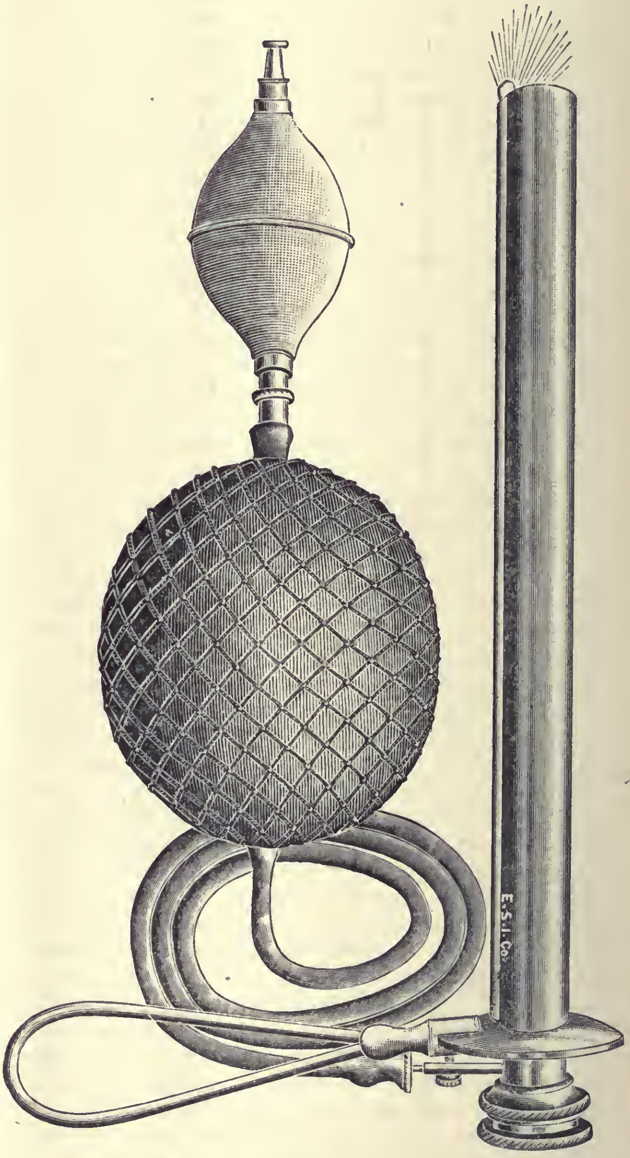

Fig. 1. Ordinary ten-inch tube.

The proctoscope presented in Figs. 1 and 2 consists of a large tube, twenty-one millimeters in diameter, on the outside of which is run a small tube which carries the lamp and is closed at its distal end by a spherical glass bulb which prevents the electric lamp from coming in contact with the tissues and thus avoids any heat or burning. The larger tube is fitted with an obturator which makes it possible to introduce it through the anus with but very little pain. The glass window or eye-piece is inserted in a metal plug which fits in the proximal end of the large tube through conical ground bearings. The large cylinder is connected with a hand-bulb by a small metallic tube, through which air is pumped into the rectum or sigmoid, thus dilating the same to any desired extent.

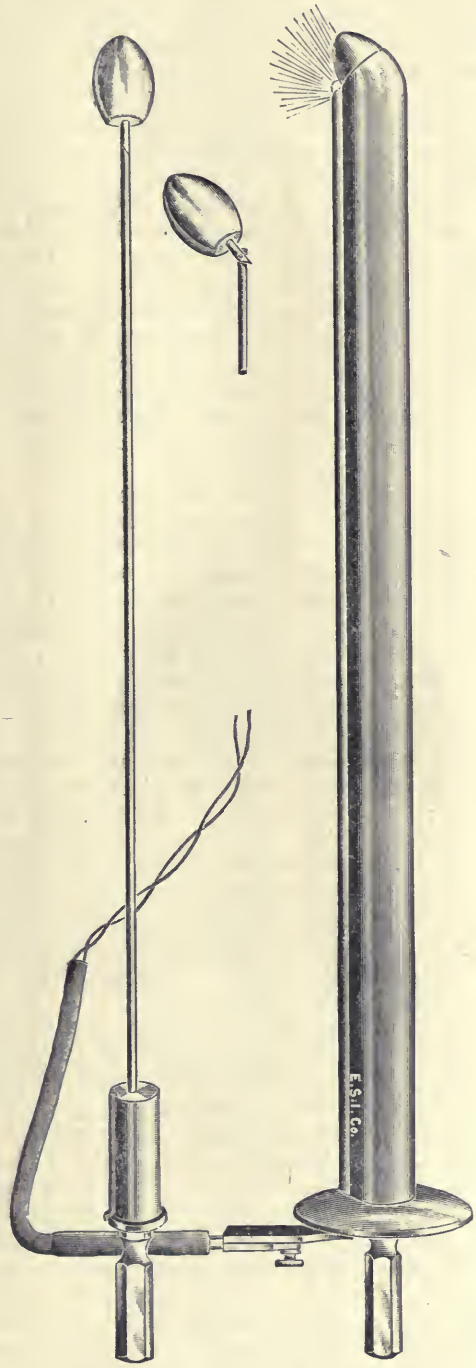

Fig. 2. Fourteen-inch tube with flexible obturator producing Mercier curve.

The tubes vary in length from four to fourteen inches. For the general practitioner the ten-inch tube will serve all practical purposes. The fourteen-inch tube is furnished with a flexible obturator giving it a Mercier curve at the end, which in certain cases of acute flexure of the sigmoid facilitates its introduction. The light is furnished by a six-cell dry battery weighing about twelve pounds and easily portable.

In the use of this instrument the patient is placed in the Sims posture; the finger is introduced through the anus and, with the glass bulb pressing upon its palmar surface, the tube is slipped through the sphincters. After this the obturator is withdrawn, the plug introduced into the proximal end of the tube, and the rectum distended by pressure upon the hand-bulb so that its walls are lifted out of contact with the distal end of the tube, which can then be carried upward into the gut without any abrasion or traumatism of the mucous membrane. The caliber of the gut being well distended in front of the instrument, its direction can be clearly seen at all times, and any pathological changes, abnormal narrowing or acute flexure can be determined. The entire circumference of the gut can be seen at any point, and the whole extent of the sigmoid can be as thoroughly examined as the lowest portion of the rectum. The light, being at the inner end of the tube, directly illuminates the parts for three or four inches above its extremity. In the long tubes the eye-pieces are fitted with magnifying lenses which enable one to make a more accurate diagnosis.

The advantages of the instrument are:

(1) It does not require any uncomfortable position of the patient for its employment.

(2) The lamp is outside of the main tube and thus does not obstruct the view in any manner.

(3) The descent of feces into the tube does not obstruct the light nor require its removal. The plug can be taken out and the tube cleansed by the introduction of small cotton wads held in long dressing forceps, without any material delay in the examination.

(4) The plug containing the eye-piece is easily and quickly adjusted through the ground joint.

The instrument is made by the Electro-Surgical Instrument Company of Rochester, N. Y.

42 West 50th Street.

THE ANTIRABIC VACCINATIONS AT THE NEW YORK PASTEUR INSTITUTE DURING 1900 AND 1901.

BY GEORGE GIBIER RAMBAUD, M.D.,
OF NEW YORK;
DIRECTOR OF NEW YORK PASTEUR INSTITUTE.

During the years 1900 and 1901, 750 patients were received at the New York Pasteur Institute. Of these 513 were bitten by dogs which were found not to be rabid for at least one week after the accident, and did not receive the Pasteur treatment; 237 received the treatment. Six patients were treated at the St. Louis Pasteur Institute, which was opened in December, 1900, to work in coöperation with the New York Institute, under the direction of Dr. C Fisch. Of these 243 persons, 3 died, 2 within fifteen days after the treatment and are not included in the statistics. So that there were 241 persons treated, with one death, or a mortality of 0.41 per cent.

In the following table these figures may be compared with those of the statistics for the preceding years:

Year.	Persons Treated.	Died.	Mortality. Per Cent.
1890	169	0	0
1891	100	2	2
1892	104	0	0
1993	85	0	0
1894	89	1	1·12
1895	167	2	1·19
1896	236	0	0
1897	133	1	0·74
1898	125	1	0·80
1899	159	2	1·25
1900 and 1901	241	1	0·41

Of these 241 persons treated, 33 were bitten on the head, 162 on the hands and 46 on other parts of the body. In 88 cases the animal having inflicted the wounds was proved rabid by experimental inoculation, or by having caused the death of other persons or animals which it had bitten (Table A). In 60 cases the animal was declared rabid by veterinary examination (Table B). In 93 cases the animal had disappeared or had been killed after having acted in such a manner as to lead one to suspect hydrophobia (Table C). We may add here that patients are admitted for treatment only when there is strong evidence that the animal which bit them was rabid, and that in about 90 of the aforementioned 93 cases the animal had shown nearly all the clinical symptoms of rabies before disappearing or being killed.

The figures may be tabulated as follows:

	Bitten on the Head.			Bitten on the Hands.			Bitten on Limbs.			Total.		
	Treated.	Died.	Mortality. Per Cent	Treated.	Died.	Mortality. Per Cent.	Treated.	Died.	Mortality. Per Cent.	Treated.	Died.	Mortality. Per Cent.
Table A.	13	1	7·69	62	0	0	13	0	0	88	1	1·13
" B.	7	0	0	47	0	0	6	0	0	60	0	0
" C.	13	0	0	53	0	0	27	0	0	93	0	0
	33	1	3·03	162	0	0	46	0	0	241	1	0·41

Of the six cases treated at the St. Louis Pasteur Institute, all belonged to Table A; 2 were bitten on the head, 2 on the hands, and 2 on the limbs. There was no death among these cases.

Persons who Died of Rabies Within Fifteen Days After the Treatment.

Case I.—W. M., seven years old, of Greenwood Depot, Va., was bitten on December 31, 1901, by a dog which had shown the clinical symptoms of rabies. Had two scratches on right cheek, near the right lower eyelid, which had bled very little, and one deep cut near the right corner of the mouth which penetrated nearly to the buccal mucosa; this wound had bled profusely. All wounds were swabbed with pure carbolic acid about half an hour later. The boy was brought for treatment on January 6, 1901, and was treated during twenty-three days from January 6th to January 28th. On the tenth day of treatment, the little patient was sad; he complained of headache and his appetite was poor; he was given a dose of calomel and on the following day he felt better. Five days later the same symptoms returned and yielded to medication and a little comforting talk, as the boy seemed to be somewhat homesick. From that time on the little patient was apparently well, but much less cheerful. One week after his return home he became ill, showing symptoms which, rather obscure at first, soon developed into those of rabies. The following history was sent to us by Dr. A. B. Wayland, the attending physician: "On February 4th and 5th Wesley had headache, loss of appetite; vomited once; cried out in his sleep; had epigastric pain and an occasional shooting pain in the larynx. February 6th: temperature 101.6° F., pulse 100; increasing nervousness. February 7th: temperature 103.5° F., pulse 120; history of delirium during the whole night. February 8th: twitching of facial muscles; convulsive contractures of extremities (no complete remissions); hoarseness and indistinct articulation by night. On being offered anything to drink, the clonic spasms became markedly exaggerated, but, by an apparent great effort the boy steadied himself and swallowed fairly well until the end. Conjunctiva suffused. No profuse salivation, but thick, tenacious mucus in pharynx. February 9th: Same symptoms, more exaggerated until about midnight, and from that time on patient grew quieter, weaker; slight muttering and twitching; *took nourishment well until just before death,* which occurred on February 11th at 8.30 A.M. Pulse was extremely variable—from 60 to 120 and back to 80. Temperature record not accurate for last three days."

A piece of the child's medulla was obtained and two guinea-pigs were inoculated in the eye, and one rabbit subdurally. The rabbit died of rabies in fifteen days, one guinea-pig in eighteen days and the other in thirty-five days.

Case II.—E. E., eight years old, of Jersey City, was bitten on July 29, 1901, by an unknown dog which was killed after having bitten three other children. The boy had two very deep wounds on the right arm which bled profusely and were treated in a hospital within twenty minutes. He came to the Institute on August 2d and was treated for eighteen days, till August 19th. The boy was at all times quite nervous (*he had had chorea three or four years before*) and was in poor health. Toward the end of the treatment he was rather more excitable than usual. On August 24th, five days after the end of the treatment, he was brought back by his mother; he showed marked symptoms of hydrophobia. His *right arm was partially paralyzed* and the boy complained of his legs being weak. Temperature 103.5° F.; pulse 142. On August 25th the *right arm was completely paralyzed* and the *right leg had also reached a marked degree of paralysis.* Death occurred on August 26th at 7.30 A.M., seven days after treatment.

On September 19th one of the three children bitten by the same dog died of rabies in Jersey City. The other two children were brought to the Institute on September 23d, were treated during twenty-three days and are well at the present writing (six months after accident, four months after treatment). They are the subject of a remark in another part of this report.

From experiments made upon dogs, we may draw the conclusion that the nervous centers of persons who die of rabies within fifteen days following the end of the treatment have been affected by the rabic virus before the treatment could have exerted its full effects. Therefore, the two patients just mentioned may be considered as not having received the treatment and are not included in the statistics.

Died After the Treatment.

D. K., seven years old, of New York City, was bitten on June 13, 1901, by a dog which was killed a few hours later. The girl had three cuts on the face; one on the lower lip, one on the nose and one just below the left eye; all wounds had bled freely and were *cauterized with nitric acid within fifteen minutes.* The little patient was treated during twenty-three days, from June 14th to July 6th. She developed symptoms of hydrophobia on August 29th and died on September 1st.

Remarks on the Diagnosis of Rabies in Dogs.

In about 50 of the 88 cases of Table A, the diagnosis of rabies in dogs was made by the microscopical examination of some of the cerebrospinal ganglia of the animals, after the method of Van Gehuchten; this was in every case supplemented by experimental inoculation. The histological diagnosis has the great advantage of giving a result within twenty-four hours. Our technic is as follows: Fixation in Van Gehuchten's fluid (acetic acid, 1 part; chloroform, 3 parts; absolute alcohol, 6 parts); or in Zacharias' fluid (acetic acid, 1 part; alcohol, 4 parts; one-per-cent. solution osmic acid, a few drops); followed by absolute alcohol frequently changed till the reaction is no longer acid. [In the above formulæ, and for dehydration, *synthol* has also been used instead of alcohol, and with good results.] As a rule, we secure both the right and left vagus ganglia and embed one in paraffin and the other in celloidin, the former method being somewhat more rapid. For embedding in celloidin we now use almost exclusively Gilson's method, modified by Lee, which does away with preserving the specimens in alcohol and allows dry cutting.

The specimens are stained according to Nissl's method or Held's modification of it. We also use in every case the following method, which gives a very clear picture of the round-cell proliferation: (1) Staining with Delafield's hematoxylin, or better with Mayer's acid hemalum; (2) after proper washing, the specimen is stained with Van Gieson's strong solution (picro-acid-fuchsin).

In all but one of the ganglia thus examined the characteristic lesions of rabies were present to a greater or to a lesser degree; the diagnosis was confirmed in every case by inoculation. In the one negative case, the result of the inoculation was also negative. In a number of cases the dogs had been killed immediately after biting the patient, and thus the lesions varied in intensity. As a rule, the period of incubation in the inoculated animals was correspondingly shorter or longer. In most of the cases in which the dog had been killed early in the disease, the changes in the ganglion cells were very slight and might have passed unnoticed; but, the proliferation around the nerve-cells was usually characteristic and was well brought out by the hemalum-picro-acid-fuchsin stain, whereas it had escaped observation with Nissl's method.

With regard to these variations in the intensity of the lesions and the value of the histologic diagnosis, we can do nothing better than quote Nocard's words: "When the result is positive—which is the rule when the dog dies of the disease—it can be stated positively that the animal was rabid; but when the result is negative—which is frequent when the dog is killed as soon as it has bitten—one has no right to affirm that the animal was not rabid; the diagnosis remains uncertain, and the strict duty of the veterinary surgeon is, now as well as in the past, to advise the bitten person to go to the Pasteur Institute."

Among the clinical symptoms upon which we usually establish the diagnosis of rabies, as in the cases referred to in Table C, are the following:

1. Change in the disposition of the dog.
2. Unusual manifestation of attachment to its master.
3. Disappearance from its home for from several hours to two days.
4. Change in the bark—or total absence of barking, even on provocation.
5. Lack of appetite, difficulty in chewing and swallowing solid food.
6. Excitement and hallucinations; animal snaps at imaginary objects, may attack its own master. Excitement caused by the sight of another dog. (This stage may be absent in the dumb form of the disease.)
7. Animal eats its own bedding, tears cushions, carpets, etc.
8. Inability to eat; animal takes food in mouth, but it drops out after one or two attempts at swallowing; drinking, however, is little or not interfered with and *there is no hydrophobia.*
9. Unsteady gait, which shows the beginning of paralysis of hind legs. Dilated pupils.

10. Later; paralysis of lower jaw, general paralysis.

Remarks on Treatment.

The treatment is nearly the same as that used in Paris. The only modification, adopted within the last two years owing to the large number of severe cases with which we have to cope,[1] is that we begin with the cord of the twelfth day and that we use the cord of the second day in every case. In ordinary cases, coming for treatment within one week after the accident, the treatment is given during eighteen consecutive days; when a delay of more than a week has occurred, the length of treatment is twenty-one days. In all cases of bites on the head and also when patients come to the Institute more than two weeks after having been bitten, the treatment is given during twenty-three days or more, and twice for the first two days.

In a few severe cases a special treatment was given, and it may not be amiss to go into a few details:

Case I.—C. D., ten years old, of Rochester, N. Y., was bitten on February 26, 1901, by a dog which died of rabies on March 2d. The diagnosis was made by Dr. Goler, of Rochester, who reported that "the cellular changes were most characteristic in the jugular ganglion." The boy had a deep cut just above the right eye; it had bled freely and had been washed with water; it was treated by a physician half an hour later. The young patient was brought to the Institute on March 8th, ten days after the accident. On March 11th, the fourth day of treatment, he complained of headache; he had had a little fever during the night. At 11 A.M. he received the regular treatment, which consisted in the hypodermic injection of 4 c.c of emulsion of the seventh-day cord. At 4 P.M. he was given, in addition, an intravenous injection of 3 c.c. of the same emulsion. On the following day the treatment was identical, with sixth-day cord. For three days he thus received in the morning the ordinary treatment, and in the afternoon an intravenous injection of the same emulsion. On the seventh day of the treatment all symptoms of malaise had disappeared and the intravenous injection was omitted. On the eighth day in the morning a subcutaneous injection of 4 c.c. of emulsion of fifth-day cord; in the evening an intravenous injection of 3 c.c. emulsion of fifth-day cord. On the following day the boy's mother reported that he had been somewhat restless and feverish during the night. The intravenous injections were then omitted for two days and resumed every second or third day till the end of the treatment, which lasted twenty-three days, ending on March 30th. The most virulent intravenous injection was that of the fifth-day cord used on the eighth day of treatment. Thereafter emulsions were used of the sixth and seventh-day cords even when third or second-day cords had been used in the morning. The headache and general malaise did not reappear after the eighth day of treatment and the boy has remained well ever since.

Case II.—F. S., four years old, of Brooklyn, N. Y., was bitten on May 6, 1901, by a dog which had shown clinical symptoms of rabies. The boy was brought to the Institute on May 8th; he had six wounds on the face, one on the nose, two on the upper lip, one on the left cheek, one on the right cheek and one under the chin. All wounds were deep and had bled profusely; they had been cauterized with nitrate of silver about one hour later. Treatment was begun on May 8th and given uninterruptedly till May 30th. For the first seven days the boy received daily an intravenous injection of 3 c.c. of emulsion; from twelfth to fifth-day cords were used. Emulsions of cords 5 to 3 were given subcutaneously, and on the fourteenth day intravenous injections were resumed till the nineteenth day. During the last five days the boy received the emulsions of fourth, third and second-day cords in the ordinary way. At no time was there any ill effect following the intravenous injections, save, perhaps, after the first injection of sixth-day emulsion, and the first injection of fifth-day emulsion; on the following days the boy was then reported to have been a little restless and feverish during the night.

On June 6th the little fellow was brought back; he had complained of a little headache on the previous day, and his appetite had been poor; he had vomited once. He was treated again for five days, receiving tenth to fifth-day emulsions; he was then discharged well and has been well since.

Cases III and IV.—N. B., nine years old, and R. K., nine years old, of Jersey City, were bitten on July 29, 1901, by a dog which bit two other children; one, E. E., died of rabies on August 26, the other on September 19th. The girl had received two wounds on the left infrascapular region, through a light dress; one of them was very deep, penetrating the muscles. The wounds had bled moderately and were treated half an hour later. The boy had two deep wounds on the dorsum of the left hand; they had bled profusely and had been treated at the same time as those of the girl. Both children were brought to the Institute on September 23d; for a few days the boy had complained of pains in the back of the head and neck and in the lower limbs. The treatment was given for twenty-three days, till October 15th. During that time each one of the two children received twenty-five subcutaneous injections of from 2 to 3 c.c. of the usual emulsions. In addition they were given on certain days and at the same time as the regular treatment an intravenous injection of 2 c.c. of the same emulsion, the most virulent emulsion thus used being that of the fourth-day cord, on the fourteenth and eighteenth days of treatment; the emulsions of the third and second-day cords were used only subcutaneously. The intravenous injections (nine for each) were made in the cephalic, basilic, median cephalic and median basilic veins.

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[1] In fact, by comparing our statistics with those of all foreign antirabic Institutes, it may be seen that our proportion of cases belonging to Table A is high, that the percentage of cases of bites on the head is relatively great, and that patients often come to us several days only after they have been bitten.

Of course, in all these cases, the emulsions used intravenously had been so prepared that no macroscopical particles of nervous substances could be thrown into the circulation.

As we are simply reporting cases, we will not enter into any discussion regarding the present application of these intravenous injections, which have been used abroad somewhat differently in a few cases;[1] we can only state facts. But, we may add that, if in the above four cases the intravenous injections did no particular good, they certainly did no harm and we must confess that, until their inefficacy is asserted and proved, we will feel strongly inclined to use them in similar cases. [They have proved useful in veterinary prophylaxis.]

Persons Not Treated who Died of Rabies.

In 1900 and 1901 six cases of human rabies came under our observation, in addition to the three cases in which treatment was given. Three of these cases have already been reported (Bull. Pasteur Institute, Sept., 1900); the other three are here related.

Case I.—J. K., forty-five years old, of Hastings, N. Y., came to the Institute on December 3, 1900. He had been bitten three months before by a dog which had been shot about eight days later on account of suspected rabies. He had received two cuts on the nose and one on the chin; the wounds had not bled and were not treated. A few days before calling on us the patient felt pain in the parts of his face where he was bitten, but paid little attention to it. On Saturday, December 1st, the pain had extended to the back of his neck, and it gradually increased till it prevented sleep. On December 2d the patient had much difficulty in swallowing a cup of coffee; within a few hours, in spite of strenuous efforts, he could not swallow anything. On December 3d, at 9 P.M., when we saw him, his pupils were dilated and he had marked hydrophobia and aerophobia. He was taken to St. Vincent's Hospital. On December 4th he was delirious and toward evening sank into a state of stupor; he died at 3 A.M., December 5th. Two guinea-pigs were inoculated with his medulla, one subdurally, the other in the anterior chamber of the eye; both died of rabies in seventeen and twenty-one days respectively.

Case II.—On October 19, 1901, we were called in consultation to see H. K., two and one-half years old, of New York City. The little girl had not been well for a day or two. On the day before she had shown some difficulty in drinking and in the morning hydrophobia was present. When we saw her, she exhibited well-marked symptoms of rabies. Upon inquiry we found that she had been bitten on the face nine months before, in January, while playing on the street, by an unknown dog which had immediately disappeared. The little patient died on October 22d. The period of incubation, in this case, had been unusually long, considering the age of the child and the location of the wounds.

Case III.—L. D., two and one-half years old, died at the New York Foundling Hospital on September 25, 1901. No history of dog-bite could be obtained, but the child showed well-marked symptoms of *paralytic* rabies when we saw him, on September 24th. He bore on the forehead a scar which could not be accounted for. Dr. Bovaird, Pathologist to the Hospital, is writing the history of the case; *the vagus ganglia*, which he kindly left at our disposal, *showed the characteristic lesions of rabies.* With a piece of medulla one guinea-pig was inoculated in the eye and a rabbit subdurally. The guinea-pig died of rabies on October 8th, the rabbit on October 12th.

Two cases were seen in St. Louis by Dr. Fisch; both were children who died of paralytic rabies. In one case the autopsy was made The lesions in the spinal ganglia were very characteristic, whereas those of the spinal cord, described by Babes and others, were, according to Dr. Fisch, entirely insufficient to establish a diagnosis.

To the above we must add two cases which came to our knowledge through patients treated:

Case IV.—J. R., forty-three years old, a miner, of Throop, Pa., came for treatment on September 16, 1901. He had been bitten on the right forearm on July 20th (eight weeks before) by an unknown dog which bit another man, also a miner, and several animals. The animal had developed rabies and died. *The man died of rabies in five weeks.* We could not obtain any details of his case. When R. came to us he had suffered from headache and nausea for two days; this is what had decided him to come for treatment. He was treated for twenty-three days (till October 8th) and is well at the present writing.

Case V.—H. C., thirteen years old, of Peckville, Pa., was bitten on the left hand on October 31, 1901, by an unknown dog which, a few minutes before, bit a little girl five years old; the little girl was bitten through her skirts. C. was treated for eighteen days, from November 4th to November 21st. He is well. *The little girl died of rabies on December 11th.*

The following cases have been gathered from the daily press. We have taken only those in which physicians had made the diagnosis of rabies.

Case I.—"Greensburg, Pa., October 2, 1900. John Smithley died yesterday from the effects of being bitten by a rabid dog five weeks ago. A little daughter of Frank Seaton is dying from wounds received at the same time, from the same dog."

Case II.—"El Paso, Texas, November 4, 1900. Silas Carson, a prominent Arizona ranchman, died of hydrophobia at the Sisters' Hospital this morning. The disease was the result of a skunk-bite received on the hand three months ago."

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[1] Murri, Bologna, March, 1892; De Blasi-Russo-Travali, Palermo, Ann. de l'Inst. Past., 1896.

Case III.—Joseph Kurey, fourteen years old, of Three-Mile, Ohio, died of hydrophobia on November 16, 1900; he was bitten on the face and legs four weeks before by a strange dog.

Case IV.—"Warsaw, Ind., November 21, 1900. Samuel George, a farmer, is dying of rabies. He was bitten in September on the right hand by a strange dog."

Case V.—"Chicago, December 3, 1900. After five days of terrible suffering, Mrs. Antonio Mastate, fifty-four years old, died last night of rabies at the County Hospital. She had been bitten by a stray dog three weeks ago."

Case VI.—"Shenandoah, Pa., December 5, 1900. James Lawlor, twenty-four years old, of Brownsville, died this evening of hydrophobia. He was bitten by an unknown dog about ten weeks ago."

Case VII.—"Greenup, Ill., December 4, 1900. Great uneasiness is felt here over an outbreak of hydrophobia. At Teutopolis, twenty miles west of here, one death has occurred."

Case VIII.—"Belleville, Ill., December 22, 1900. The bite of a dog, inflicted nine months ago, caused the death in agony last night of Valentine Lehr, twelve years old, of Hecker. The wound had healed and the boy felt no ill-effects from the bite until last Monday, when he was taken ill while at school."

Case IX.—"Zanesville, O., January 4, 1901. Ralph Stullar, four years old, of Dresden, died this morning of hydrophobia. The child was bitten by a rabid dog eight weeks ago." [This child was treated at the Chicago Pasteur Institute but was sent there too late—not until one rabbit inoculated with a piece of the dog's brain had died of rabies.]

Case X.—"Louis E. Cook, of Rochester, N. Y., died of rabies on February 10, 1901. He was bitten on December 5th by a dog which Health Officer Goler proved to be rabid. The man was advised to undergo treatment, but thought it unnecessary."[1]

Case XI.—"Greensburg, Pa., February 28, 1901. Harry Sheibler, eighteen years old, died to-day of hydrophobia. With several other persons he was bitten by a mad dog some months ago." [See Case I.]

Case XII.—"Pottsville, Pa., March 9, 1901. Joseph Kepley, fifteen years old, died at the Pottsville Hospital to-day of rabies. He was bitten on the face by a dog four weeks ago."

Case XIII.—"Shamokin, Pa., March 29, 1901. George Hoover, ten years old, is dying of hydrophobia. He was bitten by a rabid dog nine weeks ago."

Case XIV.—"George Smith, seventy-five years old, of Plainfield, N. J., died of rabies at the General Hospital of that town on April 22, 1901. He was bitten two months before on the chin and shoulder by a strange dog which was shot immediately after."

Case XV.—"Casimir Lemke, seven years old, of Chicago, died of rabies on April 26, 1901. He was bitten on the head on March 15th by a dog which was killed on the same day."

Case XVI.—"Allan Gray Landon, eleven years old, of Niles, Mich., died on April 27, 1901, after three days' illness; he was bitten by a dog one month before."

Case XVII.—"Portsmouth, O., May 8, 1901. Henry Hurst, a prominent farmer of this county, died Tuesday night of hydrophobia, after three days of horrible suffering. Six weeks ago Mr. Hurst was bitten by a supposedly mad dog. His right hand was badly lacerated. He was taken to an adjoining county and a famous 'mad stone' was applied to the wound. The stone clung to the wound for forty-four hours and it was thought by those having faith in the 'mad stone' that this was a great victory."

Case XVIII.—"Frank Husted, seven years old, of Minneapolis, Minn., died of rabies on May 7, 1901. He was bitten on the hand three weeks before by a stray dog."

Case XIX.—"Helen Hayes, of West Conshohocken, Pa., died of rabies on May 23, 1902. She was bitten on the cheek four weeks before, by an unknown dog."

Case XX.—"Hattie Muhlum, of Chicago, was bitten on the face and hands on April 14, 1901, by a dog which was shot on the same day after having shown symptoms of rabies. She died on May 21st."

Case XXI.—"William Herman, four years old, of Paterson, N. J., died at St. Joseph's Hospital, in that city, on June 1, 1901. He was bitten on the head on April 15th, by a dog which was shot soon after."

Case XXII.—"Nicholas Nash, of Chicago, died of hydrophobia on June 7, 1901. He was bitten on April 26th."

Case XXIII.—"Wallace Meikeljohn, five years old, of Philadelphia, died of rabies at St. Joseph's Hospital in that city, on June 18, 1902. He was bitten by a dog on May 13th."

Case XXIV.—"Lucretia Chewing, of Oxford, N. C., died of hydrophobia on June 23, 1901; she was bitten on the nose by a dog on May 23d."

Case XXV.—"Charles Cook, a farmer, of Red Bank, N. J., died of hydrophobia on July 27, 1902. He had been bitten by a rabid dog in January."

Case XXVI.—"Laredo, Texas, July 28, 1901. José Garcia was, seven months ago, while in Starr County, bitten by a rabid coyote. He died of hydrophobia yesterday."

Case XXVII.—"Lancaster, Ky., August 6, 1901. As a result of a bite of a rabid dog, three weeks ago, Mrs. Farmer, in Lincoln County, died of hydrophobia to-day."

Case XXVIII.—"Lewis Hubbard, of Princeton, N. J., died of hydrophobia at the Mercer Hospital, Trenton, on August 27, 1901. He was bitten by a dog about eight weeks before." [The medulla of this man was sent to us, and we could but confirm the diagnosis.—N. Y. P. I.]

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[1] A woman bitten at the same time by the same dog was treated at the Institute from January 11th to January 31st and is well.

Case XXIX.—"Hannibal, Mo., August 26, 1901. Martha Jane died here to-day of hydrophobia. She was attacked by the family dog at her home, a few weeks ago, and bitten in several places. A 'mad stone' was applied several times."

Case XXX.—Michael Meturka, a miner, of Scranton, Pa., died of hydrophobia on September 2, 1901. He was bitten on the hands by a dog about three months before.

Case XXXI.—"St. Joseph, Mo., September 3, 1901. The six-year-old son of G. A. McBride, of Chillicothe, died of hydrophobia yesterday. He was bitten on the face by a mad dog about six weeks ago."

Case XXXII.—"George Edminston, eleven years old, of Johnstown, Pa., died of rabies on September 2, 1901. He was bitten on the face by a dog one month before."

Case XXXIII.—"W. H. Boyd, a farmer, of Frederickstown, O., was suffering with rabies on October 5, 1901. He was bitten on the hand by a strange dog five weeks before."

Case XXXIV.—"John Hall, four years old, of Chicago, was bitten by a rabid dog on September 19, 1901. He died on October 5th."

Case XXXV.—"Owosso, Mich., October 6, 1901. The eight-year-old son of Fred Defrenn, residing near this city, is in the throes of hydrophobia from the bite of a mad dog received several weeks ago."

Case XXXVI.—"Allentown, Pa., November 4, 1901. J. M. Bartholomew, of this city, is suffering from hydrophobia, the result of a cat's bite inflicted several weeks ago."

Case XXXVII.—"Harry Bailey, twenty-five years old, of Aurora, Ind., died of hydrophobia on November 18th. He was bitten on the hand three months before by a dog."

Case XXXVIII.—"Mrs. Kate Martin, of Camden, N. J., died of hydrophobia on December 7, 1901. She was bitten on the hand seven weeks before by a dog."

Case XXXIX.—"Frank Austin, thirteen years old, of Jersey City, died of rabies on December 11, 1901. He was bitten on the hand on October 22 by a dog." [At that time the family physician advised the parents to bring the boy to the Institute; but he seemed to be well, and this was not done.]

Case XL.—"Mrs. Chas. Boss, thirty years old, of Bernardsville, N. J., died of hydrophobia on December 21, 1901. She was bitten several weeks before by a strange dog."

Case XLI.—"Clement Kiernon, six years old, of Jersey City, was bitten on the right cheek by a dog on November 27, 1901. He died of rabies on December 28th."

After this long list of deaths we believe that we need not offer any apology for outlining here the course to pursue when a person has been bitten by a dog or other animal susceptible to rabies.

Only a few days since one of our patients, who had studied medicine in Vienna some thirty years ago, told us that one of the most eminent professors of the Vienna faculty at that time recommended that a dog should be killed *the instant* that it had inflicted a bite! The teaching has changed since then, but the later ideas are evidently not sufficiently widespread, especially among the laity which should be informed by the profession on such matters.

The first thing to be done, then, when a person has been bitten by a dog is to remember that the animal is our "star witness," and that without it we have no evidence. Naturally, the evidence must not be destroyed and the dog should not be killed. If possible, it should be kept under observation for a few days. Roux demonstrated several years ago that the saliva of a rabid animal may be virulent three days before the appearance of any symptoms of the disease. But the inexperienced observer may not notice these first symptoms and we follow the rule established here by our regretted Dr. Gibier: We recommend that the dog be kept in confinement and carefully observed *for at least one week.* If the animal has already shown signs of disease, our advice is the same; it must not be killed, for, as we have mentioned in our "Remarks on Diagnosis," the lesions which allow a diagnosis to be made within twenty-four hours may not be present in the early part of the disease. As soon as the animal dies, its head and neck should be cut off (as near the shoulders as possible) and sent to the nearest laboratory to have the crucial tests made. If this be impossible, the brain and the medulla should be carefully taken out and pieces of each put into two clean bottles, one containing 95-per-cent. alcohol, the other pure glycerin. The material will then be in good condition for examination and inoculation after several days. The diagnosis should be made as quickly as possible, as the treatment must always be given early. In cases of bites on the head, the dog may be killed as soon as it shows well-marked symptoms of paralysis and the brain and medulla extracted; several hours and from two to three days in dumb rabies may thus be saved—a matter of great importance.

Of course, when the dog has disappeared, one must rely on clinical symptoms; inquiry should be made as to its whereabouts, its behavior; whether it had been bitten by another animal some time before, whether cases of rabies have been reported in the vicinity, etc.

As to the patient's wounds, little need be said. However, we must express our opinion as regards cauterization: *It should never be relied upon.* This does not mean that we advise against cauterizing a wound inflicted by a rabid dog; indeed, it has been shown that *immediate* cauterization with the cautery (actual or thermo-) or with fuming nitric acid, will often destroy all the virus inoculated; if it does not afford an absolute safeguard, it will at least tend to increase the length of the period of incubation, and this is important if the patient cannot reach an Institute within a short time. But if the wound cannot be treated in this way within one hour, it is much better to treat it antiseptically, as any other infected wound; an application of tincture of iodine has been recommended by Babes; the wound should be washed with a solution of carbolic acid to which a little 95-per-cent. alcohol is added, or with any other good antiseptic solution, and either a wet or a dry dressing applied, according to the size and nature of the wounds. *Nitrate of silver,* which is so often used for cauterizing, *is worthless in these cases,* and retards the healing of wounds which, treated in the ordinary way, would promptly get well.

In any case, the patient should always be urged to undergo the preventive treatment early if the latter is thought advisable.

NEW YORK PASTEUR INSTITUTE AND ST. LOUIS PASTEUR INSTITUTE.

STATISTICS OF THE PREVENTIVE TREATMENT AGAINST HYDROPHOBIA, YEARS 1900 AND 1901 (ELEVENTH AND TWELFTH YEARS).

		A			B			C	
Bites inflicted on the head and face Simple	..	5	13		2	7		6	13
Multiple	..	8			5			7	
Cauterization Efficacious	..	....	..	.	....	..	..	....	..
Non-efficacious	4	....	..	3	....	..	2	....	..
No cauterization	9	....	..	4	....	..	11	....	..
Bites inflicted on the hands Simple	..	22	62		18	47		28	53
Multiple	..	40			29			25	
Cauterization Efficacious	..	....	..	..	....	..	..	....	..
Non-efficacious	38	....	..	25	....	..	34	....	..
No cauterization	23	....	..	22	..	..	20	....	..
Bites inflicted on Limbs Simple	..	8	13		4	6		18	25
Multiple	..	5			2			7	
Cauterization Efficacious	..	....	..	..	...	..	..	....	..
Non-efficacious	4	....	..	3	....	..	14	....	..
No cauterization	9	....	..	3	....	..	11	....	..
Clothes torn	5	....	..	4	....	..	10	....	..
Bites inflicted on different parts of the body	..	....	..	..	....	..	..	2	..
Cauterization Efficacious	..	....	..	..	....	.	..	....	..
Non-efficacious	..	....	..	..	....	..	1	....	..
No cauterization	..	....	..	..	....	..	1	....	..
Clothes torn	..	....	..	..	....	..	2	....	..
Bites inflicted on bare parts	..	....	..	..	....	..	..	....	..
	..	....	88	..	....	60	..	....	93
General total	..	....	..	..	241	..	..	....	..

NOTE.—Column A refers to persons bitten by animals in which hydrophobia has been evidenced by experimentation or by the death of some other persons or animals bitten by them; column B to persons who have been wounded by animals having been recognized rabid by the clinical or veterinary examination; and column C to cases in which hydrophobia could only be suspected, as the animals had disappeared or were killed instantly and their bodies thrown away.

Of these 241 persons treated, 81 were children under sixteen years of age, 129 men and 31 women. In 220 cases the wounds were inflicted by dogs, in 13 cases by cats, in 2 by a cow, and in 2 by a calf. One hundred and sixty-five persons came to receive the treatment during the first week after having been bitten; 37 during the second week, 21 during the third week, 9 during the fourth week, 4 during the fifth week, 4 during the eighth week and 1 during the sixteenth week.

THESE 241 PERSONS TREATED CAME FROM:

Alabama	4	New York	121
Florida	1	Ohio	2
Georgia	3	Pennsylvania	29
Illinois	1	South Carolina	1
Kansas	1	Texas	6
Kentucky	4	Virginia	4
Mississippi	2	West Virginia	3
Missouri	3	West Indies	3
New Jersey	55		

One word more, to answer a question which is often asked us by patients as well as by physicians: Can the Pasteur treatment do any harm? Among our 1,608 cases we have had four in which untoward symptoms could be traced to the treatment; three had a partial paralysis of the lower limbs, lasting from one to three weeks, and which, in two cases, was evidently brought on by undue exposure to cold; one had facial paralysis lasting about four weeks, and due to the same cause: the patient was exposed to a cold draught after taking a very hot bath. In fact, we know that exposure to cold may often bring on suddenly the symptoms of rabies in persons or animals being in the latent period of incubation. These four cases made uneventful recoveries. Our experience is thus similar to that of all the other antirabic institutes. It may briefly be said that the antirabic vaccinations may cause slight nervous disturbances in neurasthenic and hysterical persons; these disturbances, however, have never been serious and they are extremely rare.

SPECIAL ARTICLE.

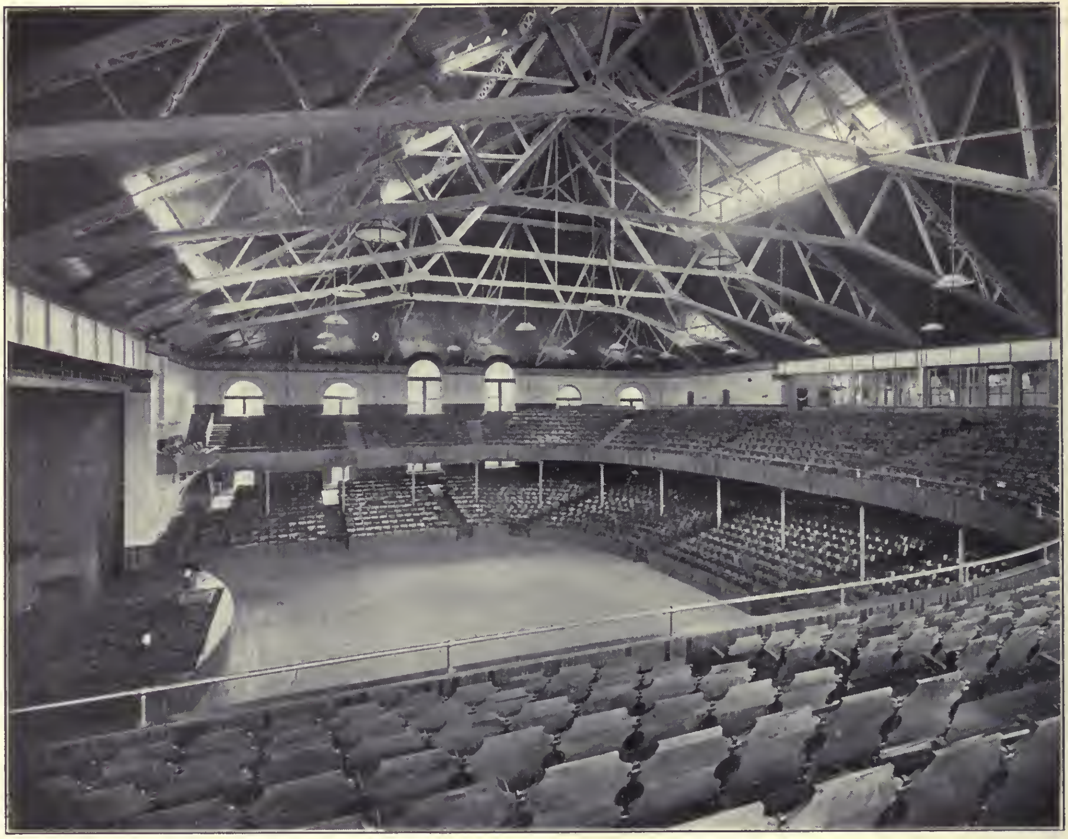
THE SARATOGA MEETING: PRELIMINARY ARRANGEMENTS OF AMERICAN MEDICAL ASSOCIATION COMMITTEES.

UNDER the energetic management of the Committee of Arrangements, the early plans for the next annual meeting of the American Medical Association, which will be held at Saratoga Springs, N. Y., June 10 to 13, 1902, have satisfactorily matured, and there is every indication that the coming convention will be the most largely attended and the most successful in the entertainment, pleasure and benefits afforded the delegates and their families that has ever been held. The able Chairman of the Committee, Dr. Geo. F. Comstock, has received valuable assistance from its remaining members, Drs. Geo. T. Church, A. S. Downs, E. D. Ferguson, A. Hewitt, F. J. Sherman and J. F. Humphrey, each one of whom has proved an exception to the general rule that the members of an important committee are content to leave not only the whole responsibility, but every detail, to its head. The Committee has demonstrated its efficiency by having practically completed the outline of work for all of the other committees that will have to do with the meeting, and by having perfected almost every detail in the plans of the Entertainment Committee, which it is so important to have prepared well in advance.

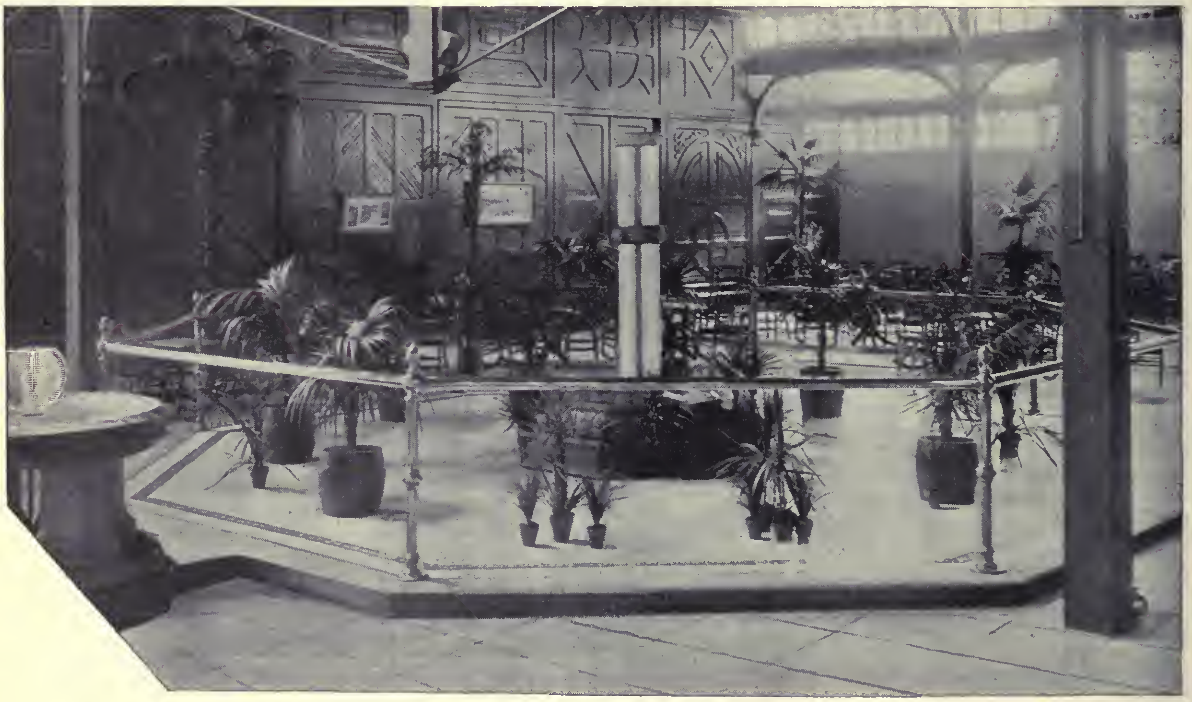
The United States Hotel has been chosen as the general headquarters, and here will be the parlors of the principal officers of the Association and the meeting-place of the various committees during the convention week. The hotel ranks among the largest in the world, and its roomy parlors, cool lobbies, broad piazzas and gardens, constitute an ideal spot for these purposes. The Hathorn Springs pavilion, where will be located

VIEW OF UNITED STATES HOTEL.
Headquarters of Officers and Committees.

VIEW OF CONVENTION HALL.
Where the General Sessions will be held.



INTERIOR OF CONVENTION HALL.



PORTION OF INTERIOR OF HATHORN SPRINGS PAVILION.
In this pavilion will be located the Bureau of Registration, Bureau of Information, Post Office, and Exhibit halls.

the Post Office, the Bureau of Registration, the Bureau of Information and the Exhibitors' Halls, is but a few steps across the street, and a short block and a half away is the big Saratoga convention hall where the meeting of the General Sessions will be called to order. The selection of the various halls and parlors where the Sections will meet has not yet been completed, but accommodations of the kind needed are so abundant that the Committee will have little difficulty in securing very pleasant and commodious quarters in the immediate vicinity of the hotels and convention hall. So convenient are the facilities at its disposal, that the Committee anticipates that no delegate to the meeting will be required to take at any time a longer walk than two hundred yards to reach the most widely-separated points where business of the convention will be in progress.

The first important social event of the week will be a piazza concert, to be held Tuesday evening, on the garden-like piazzas of the United States Hotel. On Wednesday morning there will be a concert in the beautiful park of the Congress Springs Company, one of the most attractive spots in Saratoga, and in the afternoon the ladies who accompany the physicians will be treated either to a high class vaudeville entertainment at Saratoga lake, or will be conducted on a trip to the famous Saratoga Monument. In the evening a reception and ball will be held at the United States Hotel.

On Thursday morning there will be an excursion to Lake George for the lady guests of the city. The afternoon entertainment for the fair visitors has not yet been determined upon, but the effort will be to make the Thursday afternoon diversions the choicest of all those designed for the pleasure of the ladies. On Thursday evening the final event of the meeting, the President's Reception, will be held in the parlors of the United States Hotel.

All the arrangements for these events are well in hand, and a spirit of liberal hospitality becomes evident as each detail is elaborated. The magnificent accommodations afforded by the city for the convention purposes will be accentuated by complete and thoroughly enjoyable features of the entertainment provided, and the generosity and smoothness with which the Entertainment Committee's plans will be carried out.

A citizen's reception committee, to be chosen in a week or two, will supplement the work of the regular committee of the Association, which, by the way, is soon to be greatly augmented by the addition of physicians from all parts of New York State who are also members of the State Association.

It may be remarked that never before has the Arrangement Committee of a medical association perfected such elaborate preparation for the pleasure of the wives of those in attendance as is the case this year. The fact that Saratoga is the largest and most widely-known watering-place in America has caused the Committee to anticipate an unprecedented attendance on the part of the ladies who will wish to make or renew an acquaintance with the attractions of this famous center of social activity. The entertainment of these visitors will be the earnest work of those wives of physicians forming the special Ladies' Reception Committee and to their efforts will be added the enthusiasm and experience of the ladies in the families of Saratoga's leading business men, who help to entertain several great gatherings every year, and therefore know just the right way in which to entertain and please.

To some of the social events the presence of Governor Odell and certain members of his staff is expected to add brilliancy. The Governor has not yet formally accepted the invitation to be present, as it is impossible for him to do so so far in advance, but there is every reason to believe that he will attend.

An indication that the importance of this year's meeting is being widely recognized is given in the report of Dr. J. F. Humphrey, that the early demand for space in the Exhibit Halls has been unprecedented. There are only a few of the exhibition booths yet unassigned, but these are in a very desirable location and there is no question that every square foot of the space available for this purpose will soon be sold.

The chairmen of the various subcommittees, whose earnest labor has brought the arrangements for the coming meeting so close to perfection, are as follows: Finance, Dr. E. D. Ferguson; New Membership, Dr. F. Holme Wiggin; Transportation, Dr. W. E. Swan; Entertainment, Dr. Adelbert Hewitt; Halls for Meeting Places, Dr. D. C. Moriarta; Badges, Dr. W. H. Sanford; Banquets, Dr. F. J. Reseguie; General Exhibits, Dr. J. F. Humphrey; Bureau of Information, Dr. M. E. Varney; Programs and Printing, Dr. Geo. T. Church; Registration, Dr. J. B. Ledlie; Post Office, Dr. A. W. Thompson; Hotels, Dr. Jas. R. Swanick.

MEDICAL PROGRESS.

THERAPEUTICS.

Forced Feeding and Underfeeding.—The state of nutrition of an individual depends, according to Van Noorden (Deutsche Klinik, Feb., 1902) not only on the degree of fat, but also on the condition of the muscular tissues. The latter is the more important, for with a healthy musculature is associated a normal blood and glandular system. For every individual there is a certain optimum of nutrition, to recognize which requires considerable experience and judgment on the part of the practitioner, inasmuch as he has to take into consideration not only the general condition of health, but also the capacity of all the organs. Those predisposed to tuberculosis are endangered by leanness and protected by corpulency. Neurasthenics, as a rule, feel better when they gain in weight. To those suffering from cardiac and renal diseases and emphysema, every unnecessary burden of fat is an evil. Early attempts at the cure of obesity have shown that with the effort at reduction of fat there also occurred a consequent weakening of the muscular system. But Van Noorden and Doppen experimentally proved that when the transition to a poor diet from a rich one is gradual, this weakening of the musculature does not occur. Van Noorden takes up the subject of forced nutrition, which is indicated in the following diseases: (1) In chronic wasting diseases. (*a*) Tuberculosis, in which it places the patient in the best condition for cure and in which it is the best prophylactic agent in children and adolescents predisposed to it. (*b*) In syphilis, the later stages of which are regularly associated with a loss in the body substance. Many old, obstinate cases of tertiary syphilis lend themselves to speedy cure when the nutrition is pushed. (*c*) In diabetes mellitus experience teaches that good nutrition is capable of warding off many of the dangers of this disease, which is likewise the case with diabetes insipidus. (*d*) Forced nutrition is of eminent value in Basedow's disease. (2) In functional nervous diseases, including neurasthenia and hysteria, which respond well to increased nutrition. (3) In all individuals with poor bodily nutrition. The author then discusses the indications for underfeeding. In the treatment of obesity, three different grades must be distinguished. (*a*) In extreme obesity the extent to which the diet should be restricted depends on the age of the patient. With children and adolescents up to the twentieth year, one should be satisfied to oppose the accumulation of fat only at intervals, and then only in periods of from four to five weeks in duration (intermittent obesity cures). In old age obesity cures should be avoided, for they are followed by rapid collapse of the strength. (*b*) Medium grades of obesity, in which the individual weighs from fifteen to twenty-five kilograms above the normal, respond best to treatment, but in these the same precautions should be observed as with the others. (*c*) Moderate grades of obesity demand no fat cures, but an attempt should be made to prevent the further accumulation of fat. There are indications for the reduction of fat in diseases which it complicates, as diseases of the heart, arteries, kidneys and lungs, and in chronic articular rheumatism, in gout, and in diseases of the organs of locomotion. Functional nervous diseases that are associated with obesity are benefited by a restricted diet.

Sterilized Grape Juice as Medicine.—The grape cure and the cost which it necessitates place it ordinarily beyond the means of most patients. E. IVANOV (La Sem. Méd., Feb. 5, 1902) replaces it with expressed grape juice, which can be taken about half an hour or an hour before breakfast in doses of from four to eight ounces, and which corresponds ordinarily to two hundred or four hundred grams of grapes. The liquid must be preserved in bottles carefully corked and kept in a cold place. It must be warmed slightly before being taken in order to make its effects more active. As soon as the dose has been absorbed the patient should take a little walk or other exercise. The author has successfully treated in this manner a number of cases of chronic bronchitis, nephritis and intestinal atony. He also employs it with equal success as a general tonic for convalescents from typhoid fever and severe forms of grippe. In two cases of organic heart disease, in one of aneurism accompanied with renal congestion and edema of the lower extremities and abdomen, this grape juice proved to be especially useful by reason of its diuretic action. The author thinks that this juice can be advantageously substituted for the grape cure, not only because it is more convenient, but also because it is exempt from the ordinary objections to grapes, namely, irritation of the teeth, of the mucous membrane of the mouth and occasionally of indigestion from fermentation after eating the fruit.

Cassia Beareana and African Fever.—Obscure forms of fever combining jaundice and hemoglobinuria exist in the tropics, especially in Africa, and ordinarily resist the well-known methods of treating them, such as quinine, tannic acid, ergot, perchloride of iron, etc. O'SULLIVAN-BEARE, an English physician living in the tropics of Africa (La. Sem. Méd., Feb. 5, 1902) reports success with the following remedy: From the natives he learned that a certain plant, a legumen, possessed active principles curative of the disease. He secured the plant, made a decoction of its roots, and tested it and to his great satisfaction found it useful. The plant has been called cassia beareana by M. E. Holmes, the curator of the Museum of the Pharmaceutical Society of Great Britain. A fluid extract is now made by making a maceration of the root. In five cases of hemoglobinuria, two of which were serious, and in other cases of tropical fever, O'Sullivan-Beare obtained good results with this medicine.

Advantages of the Ice-pack.—In discussing the disadvantages of the tub-bath in the treatment of typhoid, L. L. Roos (Phil. Med. Jour., Mch. 1, 1902) calls attention to the very frequent invasion of a pneumonic process which is due to the exposure of the patient during the bath, also to the shock attending the transfer from a warm bed, to the danger from hemorrhage and perforation due to the rough handling, to the relatively short effect of the immersion on the temperature. He believes that these disadvantages are obviated by the cold pack, which can be briefly described as follows: The temperature is taken *per rectum* q. 4. h. and if it be over 102.2° F. the pack is given. Whisky (℥ij) may be given before and after, if the urine be negative; if not, hot milk should be given. The bed being properly protected by a rubber sheet with a blanket over it, the patient is wrapped up in a sheet and blanket, wrung out in water at a temperature of 70° F. Half an hour later a second sheet at a temperature of 60° F. is substituted for the first, which is changed again in another thirty minutes to one at a temperature of 50° F. At this time the axillary spaces, the arms and legs, may be packed with cracked ice outside the sheets. The pack is repeated for the last time at a temperature of 40°, the entire procedure consuming two hours. The thermometer always shows a drop of from two to five degrees and it is claimed that the method acts as a sedative, that it stimulates the heart, does away with shock and rough handling, and can be more readily given than the tub-bath.

Strophanthus.—The actions and the medical uses of strophanthus, which is perhaps the most important of the cardiotonic drugs after digitalis, are summed up as follows by MARTINET (Ann. Policlinique de Paris, Jan., 1902): (1) It cannot be compared to digitalis in the constancy of its effects. Nevertheless, in certain cases it succeeds when digitalis has failed, and it is of value in replacing digitalis during the periods of treatment in which that drug is suspended for the purpose of avoiding its cumulative effect. (2) It has no marked action upon either the vessels or the arterial pressure. It is, therefore, preferable to digitalis in all cases in which arterial tension is evidently a source of embarrassment to an enfeebled heart. (3) The dosage is very irregular. In order to avoid its toxic effects, and at the same time secure its real benefits, it should be given in progressively increasing doses, till the physiological indication has been fulfilled. There are only two preparations of value, namely, the extract and strophanthin; the tincture is very unreliable. The extract is to be given in doses of from one to six milligrams, several times a day, its effect being watched. The dose of strophanthin is one-tenth as large.

Ichthyol in Tuberculosis.—In managing patients who seek the Allegheny Mountains region for the benefit of the climate, C. F. SPANGLER (St. Louis Med. & Surg. Jour., Mch., 1902) has found that mere climatic treatment gives poorer results than when such treatment is combined with the internal administration of ichthyol. The chief objections to the use of ichthyol are its odor, its taste and the eructations which it produces; these are largely neutralized by the use of capsules. A gradual improvement in the chest symptoms begins to be noticed after the first week. The appetite improves as the local symptoms subside. The drug is only useful in the chronic forms of tuberculosis. If a pleuritic or pneumonic attack occur the use of ichthyol should be suspended until all acute symptoms have subsided, when it may be resumed. Spangler suggests that ichthyol be given in all cases of obstinate cough or persistent irritation of the upper air-passages, particularly when following an attack of grippe, pneumonia or typhoid fever.

Boric Acid as an Irritant.—For many years boric acid has been regarded as free from toxic properties. In reality, however, it may give phenomena of poisoning when it is employed too persistently. Thus may occasionally be seen somewhat severe and definite signs of irritation of the rectum by means of irrigation containing boric acid. LE CLERC (La. Sem. Méd., Feb. 5, 1902) has observed a man in whom a stomatitis followed the employment of a gargle of this substance. The patient was suffering from grippe with tonsillitis, for which the doctor prescribed, among other remedies, a gargle composed of equal parts of an infusion of lime-tree flowers and boric acid to 3.75 per cent. Hoping to cure his tonsillitis more quickly the patient did not follow directions, but employed the boric acid in very strong suspension, almost pure. After having used it for fifteen hours and consuming about two quarts of it he suddenly found his sore throat very much worse, and all the signs of a stomatitis present. On examination of the mouth the mucous membrane of the cheeks, of the vault, of the palate, and of the gums, was found to be inflamed and to present grayish spots of irregular form, like daubs with a brush. These spots resembled very closely the mucous patches in syphilis. The rest of the mucous membrane was a brilliant red and felt as if on fire. The gargle was stopped and a few washings with alkaline water served to restore the mouth to a normal condition within a day or two.

Hyoscine Hydrobromate in the Treatment of Tremors.—Hyoscine has been regarded as above all a sedative to the nervous system, valuable chiefly in conditions such as acute mania and alcoholic delirium. But this action of hyoscine is not constant. A. ROBIN (Bull. Gén. de Thérap., Feb. 21, 1902) has noticed that the sedative action of hyoscine is most constant in cases of marked tremor. A characteristic case of Parkinson's disease in which this treatment was successfully practised is described. Robin cites also cases of chorea and of senile tremor which yielded to subcutaneous injections of hyoscine hydrobromate, the doses varying from .0001 to .0005 per day. He suggests that this drug is probably more useful in the class of cases mentioned than are the therapeutic means commonly employed.

Practical Experience with Hydrotherapy.—To the practitioner interested in hydrotherapy especially promising fields for study are offered by tuberculous, diabetic, anemic, neurasthenic, rheumatic and cardiac cases. So far as the neurasthenic cases are concerned J. J. PUTNAM and G. W. FITZ (Boston Med. & Surg. Jour., Mch. 13, 1902) find that, while most patients gain under treatment, it is difficult to form a fair estimate of the value of the baths as such, so largely do the elements of encouragement and discouragement enter into the problem. Putnam treats his diabetic cases with hot douches followed by moderately cool douches, and at the same time follows the co-ordinatory treatment devised by Fraenkel; a share of his success, especially so far as relief of pain and of girdle sensations is concerned, he attributes to the water treatment. An unexpectedly good result has been gained under combined treatment, baths and exercises, in a case of spastic-ataxic paraplegia. Heat and pressure, with moderate cold, have been relied on in this case, rather than great degrees of cold. Cases of paralysis agitans have improved only with regard to the general nutrition and sense of well-being.

Value of Alcohol as a Therapeutic Agent.—Considered as a drug pure and simple, alcohol belongs to the group of narcotics. The action of alcohol upon the nerve cells, by which it produces its drug effects, writes H. F. HEWES (Boston Med. & Surg. Jour., Mch. 13, 1902), is a poisonous one and places the drug among the narcotic poisons. In addition to its narcotic effects, alcohol influences the body in a number of ways. Its general uses in therapeutics to-day are chiefly (1) as a heart stimulant; (2) as a nerve stimulant or general tonic; (3) as a digestive stimulant; (4) as a food; (5) as a general remedial agent in acute infectious diseases. The results of the most accurate experimental investigation in regard to the action of alcohol on the heart and circulation dictate the opinion that the use of alcohol for the purpose of cardiac stimulation, especially in continuous doses for one or more days, is irrational. Excepting always the initial effect resulting from its irritant action, alcohol is generically a depressant of the heart and circulatory mechanism. The work of Aschaffenburg and others shows also that the common custom of the use of alcohol as a tonic for nerve and muscular work in conditions of chronic disease or of debility is irrational and probably harmful. It is to the narcotic effects of alcohol that the majority of the medicinal effects, variously interpreted as stimulant or tonic, are due. The higher nerve centers are depressed and thus the nervous excitement which accompanies acute disease or fatigue is quieted; the relief from nerve strain is rest to the patient and he feels better. Alcohol ameliorates the results of shock by depressing or paralyzing the higher centers which control inhibitory forces. The evidence of a long series of observers indicates that by its pleasant taste and slight irritant action alcohol taken with food may stimulate appetite; that it has any other influence upon digestion is not proven. From a physiological point of view alcohol is to be considered a food. Whether it is a good food is another question. Both experimental and clinical observation and study have proven that in addition to its food properties alcohol possesses certain drug properties, as a result of which it tends to produce disturbance of the nervous system and destruction of tissue protoplasm. A drug which depresses the nervous system and wastes protoplasm in health will do so in most chronic diseases. In special diseases, however, such as pneumonia or typhoid, the patient may not be able to utilize ordinary food substances and may be able to utilize alcohol and in such a case only is it rational to use alcohol as a food. In such emergencies the risk of poisonous effects is taken for the sake of the nutritional value of the drug. The writer does not intend to deny that alcohol has any value as a therapeutic agent, but to present a critical study of its use. As a result of more careful application of knowledge of its effects, the use of alcohol will be restricted and corrected.

Therapeutics of Arrhenal (Sodium Methylarsenate).—A series of clinical observations on the effects of methylarsenate of sodium is communicated by A. Gautier (Bull. de l'Acad. de Méd., Feb. 25, 1902). Favorable results were obtained in pulmonary tuberculosis in the second and third stages as well as in incipient cases. In apyretic cases the medication was most successful, causing general arrest of the phthisical process. In nearly every instance the patient gained in weight and strength. The appetite and the state of the stomach always remained satisfactory. In infantile adenopathy with persistent leucemia arrhenal was equally effective, whether given subcutaneously or by mouth. Cases are described in which advanced local adenitis was arrested and the general condition correspondingly bettered. In chorea and in the vomiting of pregnancy arrhenal is as potent for good as are the ordinary cacodylates. Petrini recently published a series of cases of carcinoma successfully treated by cacodylate of soda, but it remains for the future to decide upon the merits of this treatment. Gautier's experiments show that the methylarsenate can be administered to the adult in doses of fifteen centigrams daily without toxic effect. It would be inadvisable to give such doses for any extended period. In tuberculous subjects the maximum good was obtained when daily doses of five centigrams were given. Special care must be exercised in the administration of this remedy to persons suffering from hepatic cirrhosis or congestion or from cardiac disease, as well as to those subject to pulmonary or intestinal hemorrhage. Arrhenal has neither odor nor taste and is readily accepted by dyspeptics. It has no inhibitory action on digestion.

Asylum Dysentery.—Institutions of all classes are subject from time to time to epidemics of dysentery. Those which suffer most are the havens of chronic patients, insane or otherwise. P. W. MacDonald (Lancet, March 1, 1902) reports an incipient epidemic in the Dorset County Asylum in 1900, which he checked in the following manner: Injections of permanganate of potash were resorted to as soon as the case was diagnosed. The lower bowel was washed out, night and morning, with a solution containing from two to four grains of the permanganate of potash to the pint of water through an ordinary syringe. The motions rapidly lessened and the treatment had seldom to be prolonged beyond the third day. Recovery was universal although some of the cases were very severe. Moreover the epidemic did not spread to a large number of patients. The drug seemed to act in its double capacity of disinfectant and styptic. In the more severe cases milk was found an undesirable article of food, appeared to increase the intestinal irritation, and was rejected in favor of beef-tea and rice. One of the patients died of pneumonia after recovery from the dysentery, and at the autopsy it was found that the colon showed a large number of healed ulcers of recent date.

EYE, EAR, NOSE, AND THROAT.

Pyemia of Otitic Origin; Cure without Sinus Operation.—The successful outcome of cases of otitic pyemia which have been treated by operations upon the jugular vein or the lateral sinus should not lead us to overrate the value of operative procedures practised in these cases, says W. Schulze (Arch. f. Ohrenheilk., Bd. 53, S. 296). In three cases described by Schulze, all of marked severity, cure was effected without interference with the jugular vein and without operating on the sinus. The author especially urges the importance of attention to general therapeutic measures for the treatment of pyemia even when radical operations are performed. In conjunction with the mastoid operation general treatment of the pyemia is very often entirely successful. The veins enumerated by Schulze are essentially those which were taught long ago by Schwartze.

Electrolysis and Eye Diseases.—Although for many years electrolysis has often been employed in the treatment of conjunctival granulations, it has never been used in cases of true pannus trachomatosus, which one combats usually by peritomy and by jequirity. L. Lor of Brussels (La Sem. Méd., 1902, No. 4) has been able to cure this form of pannus by electrolysis applied directly to the cornea, even when it is in a somewhat irritated condition. His method is as follows: The patient is anesthetized to the surgical degree and conjunctival granulations are first removed; then, always with a current of two or three milliamperes, the positive pole is applied to the cheek on the same side as the diseased eye and after this is fixed with a clamp the operator proceeds slowly to pass the comb of the instrument around the cornea, circumscribing the pannus in all its extent and destroying the perikeratitic tissues for a distance of perhaps three or four millimeters. The same process is repeated one or two times according to the degree and thickness of the infiltration until the episcleral layer is reached. Then the comb of the instrument is passed two or three times very lightly over the cornea itself, and over the whole area of the pannus, with careful attention to touch the blood-vessels which pass in the superficial layers of the cornea. Then, after washing the eye, a little vaseline is introduced between the lids and a simple dry dressing is applied, which may be removed the following day. The results of this operation are always very benign and the patient does not hesitate to open his eyes. It is usually necessary to drop a little cocaine into the eye to quiet the pain and the photophobia, which may be present during the first few days after the treatment. The region where the electrolysis was applied is slowly invaded by scar tissue at the same time that the cornea takes on slowly a luster and a transparency almost equal to the normal before the inflammation began. On the whole this treatment gives prompt results in this form of pannus. Gallemearts, an associate of Lor, has extended this same treatment to other diseases of the cornea, especially to pannus strumosus, keratitis and some forms of ulcer. The method of treatment is similar and the results are flattering.

Identification of Criminals Through the Fundus of the Eye.—In line with the systems already devised for the certain identification of criminals is a method proposed by M. F. Weymann (Jour. Amer. Med. Assoc., Feb. 22, 1902). He calls attention to the fact that the conformation of the fundus oculi and the disposition of the arteria centralis retinæ and its branches are not constant, in contradiction to the usual belief. Absolute identification can be obtained by an exact drawing of the papillæ and the surrounding retinal circle, the points to be considered being the method, point, and angle of division, the exact distance of the divisional points from each other, the course of the twigs and the distance everywhere between arterial and venous branches. The only condition able to impair this test would be the impossibility of fundus exploration due to clouding of the media.

Moisture on the Mirror.—It is well known that the moisture of the breath deposits rapidly upon the mirror in making examinations of the nose and throat. Heating the instrument to a moderate degree has long been recognized as the simplest method of obviating this trouble, but has the objection of not lasting long under conditions like those of difficult and prolonged operations. W. Downie (Lancet, Mch. 1, 1902), while not at all desirous of rejecting the time-honored heating of the mirror, has found that precisely for the purposes mentioned the following procedure is very convenient: The mirror is first polished with a soft cloth, its surface rubbed over with *"le crayon anti-buée,"* dulling the surface. The mirror is again wiped and polished as before, when the surface will be again clear and bright. After this it may be breathed upon without its brightness being in any way affected. The crayon causes no scratching of the glass, does not interfere with the cleansing and sterilizing of the mirror and has no objections known to the author. He has found this plan very serviceable in examinations with electric light, in prolonged examinations, in examinations away from home, in examinations of children who are afraid of a mirror after it has been over the flame. He adds that dentists may also find the crayon useful and the eye-piece of a microscope may be kept perfectly clear and bright for continuous use in warm weather by the same procedure. The only source of supply that the author knows for the crayon is W. B. Hilliard, 63 Renfield Street, Glasgow, Scotland.

SURGERY.

Roentgen Rays for Malignant Growths.—Several undoubted cures of superficial epithelioma have been reported recently and even greater success is expected in the future, for many of the cases in which this method of treatment has been tried had previously been unsuccessfully operated on and were considered hopeless. W. J. Morton (Med. Rec., Mch. 8, 1902) reports seven patients treated by the X-ray and the special importance attached to his series depends upon the fact that most of the malignant growths affected internal organs, breast, stomach and elbow-joint. A gratifying part of the result lies in the immediate relief from pain which is almost always experienced; indeed, in some cases the effect is nearly as rapid as a hypodermic. Great care is necessary in exposing these patients to the rays, for the growth is beneath healthy skin oftentimes and severe burns or gangrene may be caused. Considerable experience is necessary properly to decide how strong a current is required. The treatment in these cases has not yet been continued sufficiently long to determine how permanent the results will be, but the relief from pain and suffering has been remarkable. In addition to a diminution in the size of the growth, secondary glands have softened and have disappeared, and the general condition of the patient has been much improved.

A Hydatid Gall-Bladder.—The extreme rarity of this condition, three cases only having been reported in the past twenty years, coupled with the great amount of work recently done on this organ, makes the following case of interest. A married woman, thirty-two years of age, had suffered for sixteen years from a series of vague symptoms which had been generally ascribed to "inflammation of the womb." Not, however, till May, 1900, did she suffer at all seriously, although it appears that, some years ago, after a very considerable degree of pain, she passed by rectum what looked like "grapes with the stalks removed." At no time had she ever had jaundice and her movements had always been of normal color. In 1898 she had a miscarriage. At that time she suffered considerably and then for the first time noticed that there was a small tumor in the upper abdomen. L. H. McGavin (Lancet, Feb. 22, 1902) reports that on removal the gall-bladder was found to be converted into a large whitish mass measuring about three by five inches; the great omentum and the transverse colon were adherent to it; it presented every evidence of primary carcinoma and, as such, was removed. No other organ seemed to be involved. As yet, no case has been diagnosed prior to operation and, in view of the paucity of symptoms, nausea being as yet the only factor which has occurred with any degree of regularity, it does not seem probable that any advance will be made in this direction.

Suture of the Olecranon by a New Method.—A method of suturing the fractured olecranon, which the author denominates hooping (*cerclage*), is described by P. Berger (Gaz. hebdom. de Méd. et de Chir., Mch. 2, 1902). This method of osseous suture is treatment of choice in fracture with diastasis, in subjects young and vigorous and in the hands of a surgeon sure of his asepsis. A result almost as good, but involving greater expense in time and trouble and more pain for the patient, can be obtained by immobilization for a brief period (eight or ten days) in extension, followed by prudent, progressive mobilization with massage. This latter method is suitable for patients who fear operation and who do not object to the expense of a prolonged treatment, requiring besides medical attendance the services of a skilful masseur. In compound fracture of the olecranon suture is necessary and should follow thorough cleansing of the wound and disinfection of the surrounding parts; free drainage and strict immobilization are requisite as long as the slightest danger of articular infection remains.

Anesthesia During Sleep.—In connection with the recent expert testimony in the Rice will case an article by N. S. Scott (Cleveland Med. Jour., Jan., 1902) is interesting as showing that chloroform may be administered to a sleeping person without awakening him. An hysterical woman of twenty-one, who had previously become so excited at the thought of an anesthetic that operation was necessarily postponed, was afterward anesthetized and operated upon without regaining consciousness from an ordinary sleep. Three or four other adult cases are reported. Nitrous oxide gas may be even more easily used than chloroform, but the feat is probably impossible with ether.

Oophorectomy for Malignant Ulcer.—During the past few years several surgeons have performed this operation in seemingly hopeless cases of malignant tumors, but with varying degrees of success. W. H. Simmons (Med. Rec., Mch. 15, 1902) reports a case of a woman, forty-five years old, who had had a tumor of the left breast with subsequent ulceration for three and one-half years. When seen, the floor of the ulcer was formed by the chest wall and, although the axillary glands were not enlarged, an operation for removal was not advised. Later, however, an oöphorectomy was done as an experiment and four weeks from that time healing began. At the end of eleven weeks the ulcer had entirely healed, being covered by a healthy-looking scar. The ulcer at the time of operation measured four and one-half inches in diameter. The diagnosis was not made by the use of the microscope, but the appearance and signs were those of a typical scirrhous carcinoma. Nothing but a vaseline dressing was used during the healing process.

Ligation of the Abdominal Aorta.—Slowing of the blood current has long been known as a good method of treating aneurism. Not even the aorta in the abdomen had escaped treatment by ligation for aneurism lower down. The operation has been done fourteen times according to the records, the last of which is furnished by R. T. Morris (Annals of Surgery, Feb., 1902). His procedure was briefly this: A six-inch incision was made from the ensiform cartilage down to the umbilicus. The aneurismal sac apparently extended at its base from the celiac axis to a point just beyond the mesenteric vessels. The plan of procedure was to employ temporary ligation, so as to fill the sac with clots and then permit the circulation of the blood to continue as before. A soft rubber catheter was selected, 12 mm. in circumference, in order to avoid injuring the intima of the artery. After the catheter was tightened it was secured with a pair of pressure forceps and both were brought out of the wound, which was narrowed down to them. The patient did exceedingly well considering the severity of the operation. Respiration rose to 48 immediately, and the pulse to 148 and was hard and throbbing at the wrist. One and a half hours later they were respectively 60 and 120; three hours later, 60 and 120 and the temperature 104° F.; nine hours later, 36, 104 and 100° F., with warmth of the legs for the first time, although both were painful and numb. Involuntary urination and defecation were present, hence the urine could not be measured. Nineteen hours after operation sensation was beginning to appear in the legs. Twenty-two hours after the operation the pulsation of the aneurism suddenly began to diminish and after about three hours had apparently stopped. Twenty-seven hours after the operation the ligature was removed and the circulation found to have returned to the legs; pulse 140, rapid and irregular. dropping quickly to 60 with regularity. Sensation completely returned and the control of urination and defecation was resumed. On the following night the patient developed septicemia and died fifty-three hours after operation. At the autopsy it was found that the septicemia was caused by gangrene of small portions of the bowel, which had been in contact with the steel forceps. The aneurism was solidly filled with blood clots, but left a patent aorta. An embolus was found in the left iliac artery, but there was no evidence of injury to the aorta at the site of ligation.

Nephropexy.—Historically Hahn performed the first fixation of movable kidney in 1881. Since then the operation has undergone many important developments. G. M. EDEBOHLS (Annals of Surgery, Feb., 1902) describes his present method of doing this operation in the following terms: The patient is placed face downward upon the table with the author's kidney air-cushion underlying and supporting the abdomen. A straight incision along the outer border of the erector spinæ muscle is made from the lower border of the twelfth rib to the crest of the ilium. Should the space between the rib and the ilium be narrow, the incision is placed more obliquely, so that its lower end will reach the ilium slightly to the outer side of the attachment of this muscle. The fibers of the latissimus dorsi muscle are now bluntly separated from each other just over the outer border of the erector spinæ muscle, without opening the sheath of the latter. The transversalis fascia is split and the perirenal fat is exposed. The iliohypogastric nerve is drawn to one side for safety. If this be impossible, the nerve must be divided and its severed ends united after the operation is over. The sheath of the quadratus lumborum muscle is opened from rib to rib along the anterior aspect of its lateral border. The retraction of the cut edges exposes a large area of raw muscle. The kidney is now freed by blunt dissection, delivered from its fatty capsule through the wound, freed entirely from it, palpated as to its substance, pelvis and ureter, and if necessary punctured or incised. The hand should now be passed down to the cecum through the wound, if a right-sided operation is being done, and the appendix examined. If at all diseased it can usually be delivered through this wound and removed. As part of the same process the other contents of the abdomen may be investigated. The capsule proper of the kidney is now divided along its convex border from pole to pole and stripped toward its pelvis until about half of it is free. Four suspension sutures of forty-day catgut are passed through the reflected portion and the still attached capsule proper close to their line of junction, two sutures being placed on the anterior and two on the posterior aspect of the kidney, each running parallel with the long axis of the organ. It is now returned to the body cavity and the sutures are passed in turn through the abdominal musculo-aponeurotic parietes. Those to the inner side of the incision will pierce the retracted sheath of the quadratus near its edge, the quadratus itself, and the erector spinæ muscle. Those to the outer side of the incision will traverse the transversalis fascia and the latissimus dorsi muscle. The wound is then closed on the usual principles after the fixation sutures have been tied. If it is properly done the bared surface of the kidney is brought up against the raw surface of the quadratus muscle. Between them very good adhesion promptly occurs.

Imperfectly Descended Testis.—The human testis may be arrested at some spot along the normal route of its migration, namely, within the abdomen, the inguinal canal, just below the superficial abdominal ring, or in the higher part of the scrotum. W. McA. ECCLES (Lancet, March 1, 1902) defines these several conditions as non-descent, partial descent, or retention. The subject is of considerable interest surgically and the anatomy of the question deserves attention. Further than the above points, the testis, having proceeded as far as the exit of the inguinal canal, may pass into an unnatural position, thereby reaching the perineum, Scarpa's triangle, the root of the penis, or the superficial surface of the aponeurosis of the external oblique muscle of the abdomen. These constitute abnormal descent or ectopia. The causes which are recognized as the most common of a long series bringing about any of these conditions may be classified briefly as follows: (1) Conditions associated with the mesorchium: (*a*) the mesorchium may be too long; the testis would therefore probably hang too freely in the abdomen and thus be prevented from engaging the ostium of the processus vaginalis; (*b*) adhesions between the peritoneum forming the mesorchium and the adjacent portion of the serous membrane, generally the outcome of intra-uterine fetal peritonitis; (*c*) abnormal persistence of the plica vascularis. (2) Conditions associated with a tesis and its component parts: (*a*) the spermatic vessels may be too short; (*b*) likewise the vas deferens; (*c*) the epididymis may be abnormal in size; (*d*) there may be a fusion of the two testes—synorchism; (*e*) certain forms of hermaphroditism. (3) Conditions associated with the gubernaculum testis: (*a*) Retraction of the testis after its normal descent; (*b*) want of action of the internal fibers of its muscle tissue before the testis has reached the inguinal canal. (5) Conditions associated with the long route which the testis has to pass: (*a*) Ill development of the inguinal canal; (*b*) of the superficial abdominal ring; (*c*) of its proper site in the scrotum. (6) Other conditions such as the wearing of a truss, preventing the onward passage of the organ into the scrotum. In some cases the body of the testis may be retained in the canal, while the epididymis and the vas pass into the scrotum. There are probably only two varieties of abnormal descent of the human testis or ectopia of the organ: In the first the testis is drawn into its unusual position by the traction of certain sets of muscle fibers of its gubernaculum. In the second the testis is pushed into its abnormal site by an advancing hernia. In connection with the first it is necessary to remember that the lower attachments of the gubernaculum are not only in the tissue at the bottom of the scrotum, but that there are also at least three other additional sites at which they may terminate. These accessory fibers may be of a permanent nature or only transitory in their existence. The actual regions in which they have been observed are those precisely in which the ectopia may be found, namely, the perineum, Scarpa's triangle, the root of the penis, and the anterior superior spine of the ilium in front of the external oblique aponeurosis. The treatment of these conditions is based along the lines of effort to replace the organ. Due reference to the factors which cause the difficulty will certainly aid in a better treatment.

Varicose Veins.—Among diseases of the bloodvessels which are amenable to surgical interference, varicosities of the veins of the lower extremities are the most common, and in one sense the most easily treated, and in another sense the most difficult to bring to a perfectly satisfactory result. A. P. GOULD (Lancet, March 1, 1902) brings out concerning them the following facts: The age at which the varices are first noticed is an important matter in the history and will in general be found much earlier than most authors state. The question is one of existence, not of pain, and too often the date at which the pain begins is taken as that at which the varix appeared. As a rule, the general health and the general condition of the tissues of the subjects of varicosity are of the best, the disease usually having no appreciable effect upon the system. There is also a conspicuous absence in all cases of the usual symptoms and consequences of venous obstruction. The result of excision of varicose veins and also of ligature of the main superficial vein, into which they empty their contents, is always of such a character as to demonstrate that the condition is not one of obstruction lying at the bottom of the varicosity itself; for, if this were the case, whenever the operation were done the active symptoms of obstruction would increase, or, if absent previously, would immediately appear. Pregnancy has an important effect on varisities, and here again a careful history will often show that the woman had the large veins long before she married, but that pregnancy was the cause of so increasing them as to make them painful. Undoubtedly, too much importance is given to the state of pregnancy as a cause, because the disease is found as often in males as in females. Hence in men the absence of any such possible obstruction as pregnancy is assumed to give in women makes it unlikely that she suffers from the disease in virtue of this physiological state. The treatment which the author recommends as the most serviceable for the average case is Trendelenburg's operation, by which the long saphenous vein is exposed near its confluence with the femoral, ligated twice and the vessel between the ligatures cut away. He has examined 121 of his patients treated in this manner with reference to the operation, first, as to its influence upon the patient's comfort; second, as to its influence upon the veins themselves; third, as to the liability to thrombosis. All his patients reported that they suffered less pain after than before the operation. In the vast majority the condition of the varicosities improved; in a few it was stationary; in none did it become worse. In those subjects who had showed a tendency to thrombosis he found that this simple procedure had been of very great benefit. Summing up, he states that this operation is simple, safe, useful in nearly all cases, reliable for the relief of pain, for the hindrance of further development of the varices, occasionally leads to shrinking or even disappearance of them, and is not without strong influence in preventing thrombosis. Its good effects are most pronounced when regurgitation into superficial veins is marked. Its superiority over excision is greatest in cases of widely-distributed and numerous varicose veins. His habit is to allow the patient to leave his bed on the eighth and the hospital on the tenth day after the operation.

PATHOLOGY AND BACTERIOLOGY.

Bacillus Resembling the Tubercle.—Careful examination of the sputum in a case which gave an unmistakable history of pulmonary tuberculosis disclosed the presence of a fungus which failed to cause any reaction after repeated inoculations into rabbits and failed to respond to several of the characteristics of the tubercle bacillus. A. P. OHLMACHER (Cleveland, Med. Jour., Jan., 1902) says that the mistake may frequently occur unless a very careful examination is made. The bacillus seems to belong to the tuberculosis group. Several similar bacilli have been reported previously, but not when associated with typical clinical cases of tuberculosis.

Agglutination of Tubercle Bacilli.—About four years ago Prof. Arloing, of Lyons, succeeded in obtaining cultures of tubercle bacilli which grew evenly distributed through the culture medium, instead of in the usual clumps, and which demonstrated agglutinating properties when in contact with the serum of tuberculous subjects, human or animal. The fact that by this method a diagnostic proof could be obtained within twenty-four hours would seem of great practical value were it not for the technical difficulties which attend its application. Prof. Koch has more recently devised another method for demonstrating the agglutinating properties of tubercle bacilli, by which he has also endeavored to show that in the human subject it is a relatively simple matter to increase the agglutinating and antitoxic properties of the blood and to exercise in this manner a certain control over immunization trials. A practical application of both methods on a rather large scale has been made by E. RUMPF and L. GUINARD (Deut. med. Woch., Feb. 20, 1902). The tests were made on 107 patients afflicted with pulmonary tuberculosis in various stages, the diagnosis of which had been definitely proved by other means. The answer to the question of the diagnostic value of this procedure is found in the statement that a positive reaction was found in 84 per cent. of all cases tested. In most instances both methods gave the same results. Although it is stated that under ordinary circumstances tuberculous patients, especially those of an advanced type, cannot produce sufficient antitoxins to combat the disease, the authors believe that under proper hygienic, dietetic, and climatic surroundings greater agglutinating powers can be imparted to the blood, which fact may be taken as a measure of increased resistance. This statement is based on the general improvement and increasing agglutinating property found in 65 per cent. of cases of the third degree of the disease. It was also found that in patients who had undergone a successful course of treatment only a very slight amount of agglutinating power could be demonstrated. Whether a negative reaction points to a rapid advance of the disease is still uncertain, as in certain very bad cases an increase in the agglutinating power was noted in a few days, while in others no results were obtained. The authors found that injections of "tuberculin" produced an increase of the agglutinating properties; in five advanced cases tested by comparatively small doses (0.0025, 0.005, and 0.010) a reaction was obtained after three injections even with a dilution of 1:100. Whether this phenomenon points to an increase of the antitoxic qualities of the blood with a consequent increase in its agglutinating properties the authors are not prepared to decide without further trials.

Microchemical Reaction of Tube-casts.—The results of certain experiments in the chemistry of urinary casts are reported by COPLIN (Phila. Med. Jour., Mch. 8, 1902). Based on the results of microchemical reactions he divides all hyaline casts into two groups:

Those which stain faintly with the mucin stain and are usually small, smooth and free from cells and fat, and those which the mucin reaction is sufficiently intense to render opaque. All granular casts that are not fatty give this intense mucin reaction, as do usually epithelial casts. The degree of the reaction in the latter seems to be directly proportionate to the granularity of the cells, which makes it appear that the more advanced the degenerative or necrotic change, the more evident the mucin reaction, and that the mucin itself is a product of this process. Fatty casts are found in various forms, some made up of small, evenly-distributed fat-globules, without any cellular structure, others that contain aggregations of large and small globules, and finally those containing epithelial cells of which the protoplasm or even nucleus shows fat-globules. The reaction tests are in accord with the belief that fatty casts result from fatty metamorphosis of renal epithelium, and it is equally probable that other casts are also the result of necrosis or degeneration of renal epithelium of which the mucin is a conspicuous product. As mucin and fat do not appear to be coincident bodies in the same cast it would seem probable to assume that the presence of one or the other is determined by some condition the exact nature of which is not apparent.

Tetanus Spores in Gelatin.—In connection with the frequent usage of gelatin as a blood coagulant in the treatment of aneurisms or as a hemostatic, attention has been called to the occurrence of tetanus in some of these cases. A series of experiments were made by E. LEVY and H. BRUNS in order to demonstrate, if possible, the presence of the tetanus spores in ordinary, commercial gelatin. They found in four out of six samples tested that the solutions of gelatin in a bouillon culture after from eight to ten days contained spores, which were readily demonstrated by the usual tests and by animal inoculation. The authors comment on the necessity of prolonged sterilization of the gelatin in live steam; they consider the usual time, ten minutes, entirely insufficient.

Simple Method for Examining Milk.—Accurate dilution of milk and plate cultures can be carried out only in a laboratory, and as the bacteria tend to increase rapidly, and there is delay in transmitting to the laboratory, serious errors may occur. WYATT JOHNSTON and F. E. JONES (Montreal Med. Jour., Feb., 1902) have found that a wire of No. 25 gauge, formed into a loop over a No. 18 knitting needle, will take up with great constancy $^{1}/_{1000}$ c.c. of milk. The Board of Health, Quebec, furnishes such a loop of aluminum, sterilized, in a cork test-tube and placed in a mailing-case with a flat-sided Blake vial containing nutrient gelatin. One loopful of ordinary milk or five of Pasteurized milk must be used for an inoculation. The sterilized tube containing the loop of wire is filled with the milk so that it may be tested for preservatives if the bacterial count is low. Complete directions are sent out with the outfit. First-class milk should not contain more than 10,000 bacteria per c.c., although it may be usable if the bacteria do not exceed 100,000. Good Pasteurized milk should not contain more than 100 to 200 bacteria per c.c.

Biological Function of Calcium.—Following up a previous study showing that trisodium citrate prevents coagulation of blood, lymph and milk by chemically immobilizing the calcium salts they contain, L. SABBATANI (Arch. Ital. d. Biol., Tome. xxxvi., Fasc. 3, 1902) has carried on further investigations as to the antagonistic properties of the two substances by their hypodermic, endovenous and peritoneal injection, separately and combined, as well as by their injection into muscles, spinal cord, cerebral cortex, etc. In the course of these experiments it was demonstrated that the toxic effect of trisodium citrate was entirely neutralized if calcium were injected with it in the proportion of three molecules of the citrate to one atom of calcium; in the same way, toxic effects of the latter were neutralized by the former. It was further observed that the citrate produced excitation of muscles, nerves, spinal cord and cerebral cortex, while calcium caused depression; hence it is concluded that not only is the presence of calcium in its normally minute quantities in the organs indispensable to the functions of the body, but that it has the effect of moderating cellular activity; thus, for example, by rendering calcium in the cerebral cortex inert with the citrate, the electric excitability is increased and epileptic convulsions may be induced.

OBSTETRICS AND GYNECOLOGY.

Comparative Weight of the Newborn.—The results found in the weights of children who are fed on the breast alone, on the breast and other foods and on the artificial foods alone, are reported by BRESSET (L'Obstétrique, Jan. 15, 1902). The experiments were carried out in 258 cases. The children were all under one year and were divided into two groups, those under six months and those between six months and one year. One hundred and eighty-three were under observation for three months and upon these the author bases conclusions. Fifty-one to 65 per cent. of those fed at the breast were above the average; 42 to 56 per cent. of those fed on a mixed diet of breast and artificial foods increased in weight, while only 36 per cent. of those fed on artificial foods alone increased in weight. This shows quite conclusively that the children of the working classes, from which the patients were taken, do far better when fed on mother's milk. These observations were made from the children of mothers who had had at least four previous children and who were well supplied with milk. The author thinks it would be very interesting to compare these results with those obtained from the comparative weights of children of primiparæ or older women. Mixed diet gives better results than mother's milk between six months and a year; 56 per cent. of the children thus fed gained in weight, while only 51 per cent. of the breast-fed children took on weight.

The Passage of Carbon Monoxide through the Fetal Circulation.—The demonstration of the passage of carbon monoxide from the mother to the fetus was made by Gréhant and Quinquad in 1883. They found that a mixture of this gas and air would kill a dog in thirty-five minutes. They estimated the quantity of this gas in the fetal blood and found it to be from five to seven times more than in the maternal blood. MAURICE NICLOUX (L'Obstétrique, Jan. 15, 1902) has given the results of a set of experiments carried out along the same lines. Animals which were pregnant were permitted to inhale an admixture of carbon monoxide and air in varying proportions for different lengths of time and were then decapitated and the amount of this gas in the maternal blood calculated. The gas in the fetal blood was also calculated and found to be in a certain proportion to the amount in the maternal blood. The greater the dilution with the air and the longer the inhalation, the nearer the amount of carbon monoxide in the two bloods corresponded. Thus, say the admixture was of one part of carbon monoxide to 10,000 of air, and the duration of the inhalation was one hour and a half, the author would find the equivalent of 0.75 c.c. of carbon monoxide in 100 c.c. of both bloods. In a proportion 1 to 10, the animal would die in from five to ten minutes and 16.8 c.c. of carbon monoxide in 100 c.c. of maternal blood would be found, whereas only 1.7 c.c. could be extracted from a like amount of fetal blood.

In connection with this fact comes the question as to whether women working in neighborhoods where this gas is present in a more than usual amount are endangering their unborn children. The author shows that carbon monoxide is present in the newborn of Paris. How much of this is normal the author is not prepared to say. The quantity varies from 0. c.c. to 11 c.c. to the 100 c.c. of fetal blood.

The Pregnant Uterus In Situ Postmortem.—The effect of the pregnant uterus on the rest of the viscera of the abdomen is important and thus far our knowledge of it is gained chiefly from frozen subjects. J. G. MOORHEAD (Med. Press & Circ., Feb. 12, 1902) reports the findings in the dissection of a cadaver in the seventh month of pregnancy in which the organs were hardened *in situ* with formalin. On opening the abdomen the uterus was found to be inclined to the right, radiated on its own axis, thus bringing the left ovary and tube against the abdominal wall and the right appendage against the cecum. The summit of the uterus was ten inches above the symphysis pubis, overlapped by the transverse colon and the great omentum. The anterior surface of the uterus was in contact with the abdominal wall in front, and posteriorly the organ was molded on the cecum, right kidney, the vertebral column and terminal part of the ileum. The peritoneum covering the uterus appeared to be of normal thickness. Traced down its anterior wall it was reflected to the back of the symphysis half an inch above its upper margin, where it met the upper margin of the bladder. On each side the membrane was reflected on to the iliac fossa, corresponding here to the base of the broad ligaments. Posteriorly it passed to the rectum at the level of the fifth sacral vertebra; hence practically unchanged from its relation in the non-pregnant state. Anteriorly at first sight it seems to be raised, but on consideration it will be seen that it kept its original relation to the uterus, and appears to be raised owing to the hypertrophy of the organ. The bladder remains behind because it does not hypertrophy. The tubes lay in close contact with the uterus, owing to the bending out of the layers of the broad ligaments. The veins of the broad ligaments, especially the ovarian, were very much dilated. The greater part of the small intestine was found to the left of the uterus. A small length extended half above the organ and beneath the transverse mesocolon. The pelvic diaphragm was not hypertrophied and some support seemed to have been given to the uterus by the obliterated hypogastric arteries, which suspended the organ somewhat like a hammock. The bladder was in relation with the lower part of the uterus, triangular in shape, empty, with its apex directed upward behind the symphysis, and with its base on the anterior wall of the vagina just in front of the place where the uterus pierces it. The anterior wall was convex from side to side and from above downward, and the posterior was concave and molded on the uterus. There were in addition pressure effects noticeable in the veins and in the right ureter. Other than this there were no special changes in the organs.

Reflex Aphonia of Menstrual Origin.—The important changes which take place in the whole body at puberty from the commencement of the functional activity of the genital organs are often appreciable in the organ of speech and phonation, says NIEL (Gazette de Gyn., Feb. 15, 1902). It would seem that the development of the vocal cords were dependent to a more or less degree upon the appearance of sexual activity. The reflex pathological relations between the two functions exist in men as well as in women, but they are found more often in the latter because women undoubtedly have more genital disorders. These conditions are often found in females at the outset of the menstrual flow, as well as in adult life and at the menopause. Spasm of the glottis, due to a violent congestion of the vocal cords and the whole larynx, which, however, is transient, usually, lasts but a few minutes, disappearing as rapidly as it comes. In adult life vocal disturbances usually come on at the time for the flow to make its appearance, at times when there is irregularity in the flow, whether there is or is not some concomitant pathological condition in the urogenital tract. The author has seen several cases of this character and finds that it is necessary to treat the local conditions, which may run on to chronicity. At the same time, a permanent cure of the vocal disturbance can only be accomplished through a most thorough eradication of the disease in the genital tract. The reflex conditions are brought on through both the nervous and the vascular systems. Most often there is an intense congestion of the postnasal pharnyx and sometimes there is more or less marked paresis of the inferior vocal cords.

Extra-uterine Pregnancy.—The danger of allowing the continuance of an ectopic gestation after symptoms of partial rupture have appeared, especially if the death of the fetus is not certain, is well illustrated by a case reported by W. H. HUMISTON (Cleveland Med. Jour., Jan., 1902). The patient had had three or four attacks of severe pain in the lower abdomen accompanied with some bloody discharges and moderate pulse and temperature reactions during the second and third months of pregnancy. She finally, during the fifth month, had a very severe attack, the evidences of internal hemorrhage being so marked that the result of operation seemed very doubtful. Hypodermoclysis of salt solution beneath the breast was at once begun and at the end of the operation two quarts had been injected and most of it absorbed. The placenta was found adherent to the posterior surface of the broad ligament and to coils of intestine. After tying off the broad ligament with the ovarian artery the placenta was entirely removed and the gestation sac packed with iodoform gauze. The patient made a good recovery, but subsequent injections of salt solution were necessary; especial dependence is placed upon this by the author. It is not necessary to clear out the blood and clots from the general cavity, as they are readily absorbed, but the gauze packing should not be removed until a firm wall has been formed around it.

Symphysiotomy.—A series of thirteen successful operations is reported by E. A. AYERS (Jour. Amer. Med. Assoc., March 8, 1902). He performed it on eleven individuals, repeating the operation in subsequent pregnancies on two women, and doing it three times in one case. Infection of the joint did not occur and no death was directly caused by the operation. Three children were lost and eleven saved. Firm fibrous union of pubes was secured in all cases but one. Each patient was kept in bed four weeks. He protests against Cæsarian section as the method of choice and claims that the true mortality after symphysiotomy can be had only after subtracting that due to all preceding efforts at delivery. Properly the operator should select only that method which gives the best results, not in general, but in his hands. He considers the sources of prejudice against symphysiotomy as follows: (1) Wounds about the vulva can be rendered absolutely aseptic and need remain open only until the joint is severed. The approximation of the wound edges by bringing the knees together obviates the necessity for stitches. (2) The subcutaneous method of dividing the joint also reduces the danger of infection. (3) Hemorrhage can be largely avoided if the scalpel be passed along the face of the pubes instead of below it and thus wounding the bulbus vestibuli, or above it and entering the peritoneal cavity. (4) Perisymphysial lacerations during delivery occasion the greatest anxiety. The relations between pelvic inlet and fetal head should always first be ascertained in order to determine whether a pubic separation of 2½ inches will insure delivery. Full antepartum dilatation of the cervix must also be secured and when forceps are applied to the head the cervix and bladder should be pressed back while the forceps bring the head not so much through the brim as through the cervix. As the separation of the pubes alters the normal mechanism, anterior rotation of the head should be assisted by the forceps. (5) Care in handling both before and after operation will prevent injuries to sacroiliac joints or cause failure of joint union. The author submits certain requirements as necessary to secure the surest and best results: (*a*) Constant apposition of the pubic bones with even coaptation, but without compression. (*b*) Ability of the patient to empty bowels and bladder without disturbance of the pubic joint. (*c*) Freedom of restraint of the body above the pelvis and of the limbs, whereby lactation can be performed. (*d*) Avoidance of bed-sores.

Strangulation of Uterine Fibroids.—The possibility of this distressing and dangerous accident after parturition should be made an element in weighing the question of the necessity for removing fibroids by myomectomy from young married women. E. REYNOLDS (Jour. Amer. Med. Assoc., Mch. 8, 1902) reports four cases in which this condition was found which lead him to present the following diagnostic points: (1) The appearance early in the puerperium of severe intermittent paroxysmal pains and referred to a definite spot which is found acutely tender; (2) the appearance in a few hours of the symptoms of pelvic peritonitis; (3) the detection of an irregularity in the uterine wall at the tender spot, which can possibly only be made out under anesthesia. The principles of treatment should be: (*a*) The control of pain by morphine and, if not promptly successful, by brief but profound anesthesia, repeated when necessary; (*b*) failure of these procedures and an operable condition of the patient should point to immediate myomectomy; (*c*) if peritonitic symptoms be extreme and operation per abdomen be contraindicated, and if the tumor be accessible from below, its free puncture and the drainage of the contained serum may be relied upon to terminate the attack and permit the safe removal of the tumor at a later date, should this prove necessary.

MEDICINE.

Diagnosis of Scarlatina.—From time to time cases are seen which are very difficult to determine. So J. M. DAY (Dublin Jour. of Med. Science, Mch., 1902) enumerates the symptoms. Nausea or actual vomiting is rarely absent. Sore throat may be present without the patient complaining, so an examination should be the routine with children; in scarlatina the pharynx, soft palate, tonsils and hard palate present a red punctiform appearance which is easily recognized. The temperature in the beginning is 100° to 104° F., and the next day it falls, to rise again in the evening. It generally becomes normal by the eighth or tenth day. The pulse is more characteristic, seldom being below 120, and often continuing rapid after the temperature is normal. The rash is never seen on the end of the nose or around the lips, and appears first where the skin is softest, as in the flexure aspect of the arms, the sides of the chest, the lowest part of the abdomen, the upper part of the thighs, and in the axilla. It is almost invariably out by the third day. At the flexed elbow, at Poupart's ligament, and behind the flexed knee, a browning along the folds of the skin is noted. The tongue is coated heavily, and the injected papillæ show through; when the coating strips off, the true "strawberry" tongue is seen. This is a red (not coated) tongue, bearing red papillæ. In a doubtful case the author excludes scarlatina if the patient has had the disease; if not, he examines for rash on palate, backs of hands or sides of fingers, browning of the flexures, stripping of the tongue, and reddish spots, smaller and more acuminate than rose spots, on the lower limbs. These, with vomiting or nausea, justify isolation. Otorrhea is sometimes the first marked manifestation in mild cases. In measles the rash appears on the fourth day of catarrhal symptoms and appears first on the face and upper parts of the body. It consists of raised, reddish-brown crescentic spots. In rubella, the pulse is slower, and the patient does not feel ill in proportion to the amount of the rash. The peeling of the tongue is absent, and vomiting is rare. Other diseases occasionally closely simulating scarlet fever are meningitis, typhoid fever, septicemia, rheumatic fever, urticaria, and erythema, but these can be distinguished by the course of the disease.

Intermittent Claudication.—Referring to the occurrence of this condition in the horse and its rare consideration in the literature of human medicine, WILLIAM OSLER (Montreal Med. Jour., Feb., 1902) describes two cases, one occurring in a man, the other in a woman. The man had vomiting, pain in the abdomen, general arteriosclerosis and an aneurism of the abdominal aorta. He gave a history of syphilis. Finnie inserted ten feet of wire into the aneurism and passed an electric current for an hour, following which the patient improved greatly. About a year later he reported that after walking a certain distance his legs would give out completely; after resting he would proceed a short distance, then rest again. There was no paralysis, but an uncontrollable feeling that he could not take another step. There was a sensation of dead, heavy weight in the legs, but no cramps. Walking in the house did not bring on the condition, only walking in the street. The woman had mitral stenosis and general arteriosclerosis, with absence of pulsation in the dorsal arteries of the feet. She had attacks of intermittent lameness with numbness and tingling in the feet, and complete inability to walk till rested. The right leg and foot have been somewhat blue with much pain, which is intensified if the leg hangs down. The treatment was warmth to the legs and careful friction, and she did remarkably well.

Splenic Hypostatic Albuminuria.—The curious condition of albuminuria while the patient is lying down is rather uncommon in one sense, and yet with reference to intra-abdominal conditions is readily understood from a purely mechanical standpoint. H. D. ROLLESTON (Lancet, Mch., 1, 1902) reports a case in which this form of albuminuria was of splenic origin. The explanation given by Falkenheim is that when the spleen is enlarged it may press upon the left renal vein, interfere with the return of venous blood from the kidney and thus cause albuminuria. Rolleston states that he has also had two cases, with cirrhosis of the liver and splenic anemia respectively, presenting enlargement of the spleen, and each a hypostatic albuminuria. The diagnosis of the condition is important. The bladder should be empty when the patient gets up; otherwise an admixture of the albuminous urine excreted while in the recumbent position with the normal urine of the erect position will occur and the patient appear to have a continuous albuminuria. Again, the albuminuria must not appear until after the recumbent position has been maintained for some time. It may also be intermittent, tending to prove that the spleen need not always obstruct the vein.

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SMITH ELY JELLIFFE, A.M., M.D., Ph.D., Editor,
No. 111 FIFTH AVENUE, NEW YORK.

Subscription Price, including postage in U. S. and Canada

PER ANNUM IN ADVANCE	$4.00
SINGLE COPIES	.10
WITH THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, PER ANNUM	8.00

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

LEA BROTHERS & CO.,
No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK.

SATURDAY, APRIL 5, 1902.

THE X-RAYS IN MALIGNANT DISEASE.

WE present this week a full report of a meeting of the Harvard Medical Society of New York City at which the subject of the employment of the X-rays for the treatment of malignant disease was very fully discussed.

There has been almost from the first introduction of the X-rays into medicine a feeling that this powerful agent should prove of practical therapeutic value. This feeling is evidently not doomed to be entirely disappointed and recent observations show that the curative possibilities of this form of electrical energy are very great. Conservative observers find that practically every form of reasonably limited external cancer is improved by exposure to the X-rays. This means not only that relief of annoying symptoms is afforded but that actual disappearance of cancerous nodules and rapid healing of malignant ulcerative processes takes place. While for extensive cancerous involvement, or for deep-seated malignant tumors, treatment by this means is not encouraging as regards ultimate favorable prognosis, exposure to the X-rays never fails to bring relief of pain and this relief often endures for several days after the treatment.

All this promises well for a new remedy for these most hopeless conditions. For in spite of great advances in surgery in recent years the attitude of surgeons generally and especially of those with most experience has been very pessimistic as regards radical cure in these cases. It is true that surgical intervention is most hopeful in just the class of cases in which the X-rays promise to be of service, but a new and promising method of treatment will prove welcome, not only to medical men but even to those who make a specialty of surgery. For one reason, the absence of cutting will encourage patients to put themselves under medical care much sooner than has hitherto been the case.

Practically the only hope of radical cure in malignant disease is founded on the treatment of the condition at the earliest possible moment before involvement of deep tissues or metastatic extension has rendered the prognosis doubtful no matter what method of treatment is employed.

The use of the X-rays in malignant disease has its limitations. Dr. Coley's report with regard to cases of rapidly-growing sarcomata shows that these tumors are as a rule very little or not at all affected by X-ray treatment. Slower-growing sarcomata are on the other hand very favorably affected. As a practical rule, the slower the growth of any form of malignant neoplasm the longer it will take to influence it, the more exposures to the X-rays will have to be made and the more prolonged the treatment will have to be in order to secure radical cure and guard against relapse. Some of the more chronic epitheliomata of the face or old persistent rodent ulcers may have to be treated for months to assure lasting benefit. There is no doubt, however, that when the X-rays are curative the eventual cosmetic result is much better than any that can be attained even by ingenious plastic surgery, unless the defect in the tissues has been very large.

There remains the question whether in operable cases the X-rays should be preferred to the knife. When the patient is ready to submit to either form of treatment and the malignant neoplasm is limited in extent and favorably situated for operative removal, it would seem the part of conservative therapeutics in the present unsettled state of knowledge to advise operation, reserving the X-rays for the first sign of recurrence. Patients will be very willing to submit subsequently to the X-rays without delay and will not fail to keep under observation from dread of the discovery of recurrences, as they otherwise are wont to do. When patients have a deep-seated objection to operation and show a tendency to put off treatment for this reason the X-rays should be employed and the earlier the more hopeful is the ultimate prognosis.

There would seem to be an especially wide field for the therapeutic effect of the X-rays on enlarged glands in cancer cases. In most of the reported cases these have cleared up so satisfactorily as to suggest the idea that the enlargement was due, not to the cancerous infiltration, but to an irritive inflammatory process set up by the absorption into the lymphatics and detention in the lymph-nodes of secondary inflammatory products from around the true cancer area. This suggests the idea that the X-rays may prove useful in enlarged glands consequent upon chronic inflammatory processes generally. Tuberculous cervical glands, for instance, may yield to the new agent and some good results in this line have already been reported. This is not surprising, as lupus vulgaris has in a number of reported cases been cured. Hodgkin's disease in an advanced stage yields to the action of the X-rays, and not only do the various external glandular enlargements rapidly diminish in size but the spleen also is lessened in all its diameters and the patient's general condition much improved by the resultant absence of discomfort.

The employment of the X-rays is, then, most promising; but there is no doubt that during the next year or two more harm than good will result from their use. Charlatans and the inexpert will use them without due precautions and for many conditions for which they are utterly unsuitable. Sufferers from internal cancer, especially the victims of gastric and uterine malignant disease, will be buoyed up with false hopes until whatever chance there may be of radical cure by operative procedure is long past. No one but a medical man of some experience in the therapeutic use of the X-rays should be allowed to use them for curative purposes. Above all, physicians should be wary of suggesting to patients that an electrician who happens to have some experience in taking X-ray skiagraphs should be permitted to apply the rays with hope of possible benefit.

A therapeutic treasure of the greatest importance has been revealed and it behooves the medical profession to take care to discover its exact limitations and indications and not to allow it to be brought into the serious disrepute that has attached to every new discovery in therapeutics of recent years, because of the hasty overzealous enthusiasm of the inexpert and unknowing.

SURGICAL INTERVENTION IN TUBERCULOSIS.

At a meeting of the Harvard Medical Society of New York City (see Medical News, Jan. 25, 1902) there was some discussion of the present status of surgical opinion with regard to operative intervention for the amelioration or radical cure of tuberculous processes. The prospect for cure of tuberculosis of the lungs has become so much more hopeful from a medical standpoint especially in incipient cases that there has come to be a certain feeling of confident expectancy that even in advanced conditions much may be accomplished in the near future with the help of conservative surgery. The discussion mentioned shows, however, that this expectancy does not rest upon any promising basis in the present attitude of surgeons towards tuberculous processes generally and especially those forms of tuberculosis in which operative intervention has been most commonly resorted to. The possibility of successful surgery of tuberculous lungs becomes very distant when we realize that the current of the most conservative surgical opinion the world over is setting more and more against any interference with Nature's curative and resistive efforts in tuberculosis anywhere in the body.

Operative intervention has been found in most cases to be of doubtful utility, while in some cases it has proven positively harmful. The treatment of cold abscesses has been in dispute, but more and more the expectant method has gained advocates. For years there has been a school of orthopedic surgeons who have deprecated operative treatment of tuberculous joints and have insisted that expectant methods properly directed give the best results as regards ultimate disposal of the focus of disease and the subsequent usefulness of the joint. Very recently there has been a reaction against the surgical treatment of peritoneal tuberculosis and the widely-practised laparotomy for the condition now seems likely to fall into innocuous desuetude.

The story of the rise and decadence of operative procedures for tuberculous peritonitis is a typical chapter in therapeutics. It illustrates how complex is the problem of helping tuberculous patients and how easy is self-deception with regard to the benefit that may accrue from any method of treatment. Some three years ago Dr. Max Jaffe, in an article on the value of laparotomy as a therapeutic measure for tuberculous peritonitis, published in the *Sammlung klinische Vorträge,* No. 211, Neue Folge, showed that

German surgical thought was beginning to doubt that much good was ever accomplished by operative intervention in this condition. When König first introduced the operation to the medical profession in his classic article published in the *Centralblatt für Chirurgie,* 1884, he warned surgeons as to the possibility of self-deception and thought laparotomy indicated only in selected cases. Some six years later König was able to collect from medical literature over 130 cases in which laparotomy had been done for tuberculous peritonitis in various forms. He pointed out, however, that the ultimate results were not as good as the statistics gathered within a year or so after the operation might seem to show. If more than two years were allowed to elapse before the case was reported the recoveries were reduced from nearly 70 per cent. to scarcely more than 25 per cent.

Skepticism with regard to the operation has continued to grow, especially in recent years. In America opinions have been rather conservative. Bottomley in the Medical and Surgical Reports of the Boston City Hospital (see *American Medicine,* Feb. 15, 1902, p. 265) gives a consideration of 28 cases of tuberculous peritonitis treated by laparotomy and seen at least a year after operation. He concludes from his results that cures may be expected in from 30 to 40 per cent. of the cases. Even this not very promising outlook for surgical benefit is higher than that justified by such foreign observers (quoted by Bottomley) as Treves, who had 35 per cent. of recoveries, Wunderlich, who had 23.3 per cent., and Czerny, who had 26.8 per cent. Fenger, in an article in the *Annals of Surgery* for November, 1901, is inclined to think that laparotomy can accomplish very little that will not be effected quite as well by simple puncture and drainage of the ascitic fluid, for it is only in cases of simple tuberculous ascites that operative interference does any good.

Fenger quotes a striking article from Borchgrevink (*Bibliotheca Medica,* Abtheilung E. Chirurgie, Heft. 4, klin. und experiment. Beiträge zur Lehre von der bauchfell Tuberculose, Stuttgart, 1901) who does not hesitate to condemn laparotomy for tuberculous peritonitis as entirely useless. Practically all surgeons are agreed that for adhesive or ulcerative tuberculosis of the peritoneum laparotomy is of no avail and not infrequently seems to augment the process in the abdomen or to light up a tuberculous focus elsewhere in the body. Borchgrevink, however, goes so far as to say that even "serous tuberculous peritonitis is a domain which surgery must hand back to the internist with thanks for the splendid opportunity which a misunderstanding gave to the medical profession, by means of laparotomy, to study tuberculosis in one of the large cavities of the body." It would, indeed, be surprising to find that laparotomy had done absolutely no good for tuberculous peritonitis despite the many favorable reports from great conservative surgeons. If we consider the history of the therapeutics of tuberculous processes generally, the disappointment involved would be no more than might have been expected from the repeated "lessons of undeceit," to use an expressive German phrase, that make up the story of successive "cures" for tuberculosis. It seems certain that active interference of any kind with tuberculous processes rather hinders than helps Nature's curative efforts. The only therapeusis that can be looked to with confidence is the use of roborant measures that increase resistive vitality, but leave direct curative action to those as yet mysterious methods of Nature that are often so effective if properly encouraged.

QUACKS AND ARISTOCRACIES.

In defiance of the well-known fact forcibly pointed out by Jacoby ("Selection in Aristocracies") that environment and intermarriage of aristocracies, royalties and plutocracies tend to produce mental and physical degeneracy and notably that mysticism which predisposes to an admiration for quackery, the assumption is but too frequently made that aristocracy, plutocracy and royalty are *prima facie* evidence of intelligence.

Jefferson points out that royalties have long had a predilection for quackery. Queen Anne's weak eyes, he remarks, caused her to pass from one empiric to another for the relief they promised to give and in some cases even persuaded her that they had given her. She had a passion for quack oculists. Happy was the advertising scoundrel who gained Her Majesty's favor with a new collyrium! For, of course, if the greatest personage in the land said that Professor Humbug was a wonderful man, a master of his art and inspired by Heaven to heal the sick, there was no appeal from so eminent an authority. How should an elderly lady with a crown on her head be mistaken? Do we not hear the same arguments every day in this enlightened generation when the new chiropodist or rubber or inventor of a specific for consumption points to the social distinctions of the dupes as conclusive evidence that he is neither supported by vulgar ignorance nor afraid to meet the most searching scrutiny of the educated? Queen Anne was so charmed with two of the many knaves who by turns enjoyed her countenance that she had them sworn in as her oculists in ordinary; one of them she was so silly as to knight. William Reade, originally a botching tailor and to the last a very ignorant man (as his "Short and Exact Account of All the Diseases Incident to the Eyes" attests), rose to knighthood and the most lucrative fashionable physician's practice of his period. It was true that Sir William Reade was unable to read the book which he had written through an amanuensis, but many wealthy people who listened to his sonorous voice behind his lace ruffles and gold-headed cane and saw his coach drawn along by superb horses thought him equal in every respect to Pope and Swift. Anne's other sworn oculist was Roger Grant, a prodigiously vain cobbler who had his likeness engraved in copper. He was in the habit of getting hold of a poor person of imperfect vision, whom, after treating with medicines and half crowns, he induced to sign a testimonial to the effect that he had been born stone blind and had never enjoyed any sight until Providence led him to Dr. Grant, who cured him in little more than a month. Through the usual clergyman's proclivity for quacks many signed the certificates as witnesses. If they did not "Dr." Grant himself saved them the trouble by affixing their names.

In the Georgian epoch of the seventeenth century the drunken Madam Mopp, the "bonesetter" or osteopath, enjoyed the patronage of the aristocracy, although she was satirized by Hogarth in his "Company of Undertakers." In the same century there were prototypes of Dowie and the Christian Scientists; indeed, these last are survivals of the medicine man which have persisted throughout all the stages of human evolution.

The German Society for Protection of Physicians, which has lately taken up quackery among the aristocrats and plutocrats, is in error in assuming this to be the product of nineteenth century degeneracy. The quack, as Carlyle remarks anent Cagliostro, comes in for his share in all ages. Every financial revolution places the mystic tendencies of primitive man in the foreground, since the moneyed Philistine is peculiarly predisposed to the occult notions of primitive man.

ECHOES AND NEWS.

NEW YORK.

The Late Prof. Paul F. Munde.—The Medical Board of the New York Skin and Cancer Hospital, at a meeting held March 29th, adopted the following resolutions: *Whereas,* Dr. Paul F. Mundé, a member of the Consulting Board of our Hospital, has been removed from us by death; be it *Resolved,* That in the death of Dr. Mundé the Board has lost one of its most eminent members, one whose professional attainments had given him a high reputation both at home and abroad, and whose noble character and conscientious life work had endeared him to his associates and friends. *Resolved,* That our deepest sympathy is extended to his family in their great sorrow, and that a copy of these resolutions be sent to the medical journals for publication.

Committee. { J. E. JANVRIN, M.D.,
L. DUNCAN BULKLEY, M.D.

Plans to Keep City Clean.—At the regular meeting of the Women's Health Protective Association of New York held in the Academy of Medicine, Tuesday afternoon, Commissioner-of-Street-Cleaning Woodbury, in a half-hour talk, outlined the measures which he is inaugurating thoroughly to clean the city. In the course of two weeks he will deliver in New York 200,000 circulars, explaining at length the law prohibiting the casting of garbage or refuse of any sort into the street, and detailing the penalties for violations of the same, most of which provide for a fine of $10. "One of these circulars," he said, "will be placed in every house, and the man who delivers it will be required to obtain a receipt from the householder. Should the latter disregard the circular to the extent of a violation, the next call will be made by a policeman." Commissioner Woodbury then described the incinerating plant which will soon be in operation at the foot of Forty-seventh Street. He said that the city's condition will continue to be insanitary until there is in general operation a system for separating the ashes from the garbage, and then reducing the garbage to ashes instead of throwing it into the sea.

Manhattan Dermatological Society.—A regular meeting was held Friday evening, March 7, 1902, at the residence of Dr. A. Bleiman, with Dr. W. S. Gottheil in the chair.

Dr. Oberndorfer presented a case of eczema seborrhoicum annularis; the patches were circular and grouped; each patch was scaly with a white scaly center; eruption on back, chest, scalp, face and ears. Drs. Cocks and Abrahams call it pityriasis rosea. Dr. Bleiman regards it as a case of eczema seborrhoicum; in pityriasis rosea the eruption is pale pink and not acutely red as in present case. Drs. Sobel and Gottheil agree to eczema seborrhoicum annularis. Dr. Pisko regards it as a case of tinea versicolor, the peculiar appearance being due to treatment.

Dr. Sobel presented a somewhat similar case in a male; the eruption, however, was not grouped in circles as in the preceding case; eruption on chest, scalp and ears; presented as eczema seborrhoicum. The diagnosis of eczema seborrhoicum was concurred in.

Dr. Gottheil showed a woman with an eruption of irregular cresentic patches with light centers, situated upon buttocks and thighs. He calls it pityriasis rosea; making a distinction between this and herpes maculosus et squamosus. Dr. Cocks agrees to the diagnosis. Dr. Abrahams also agrees and further stated that coalescence of patches was more typical in pityriasis rosea than herpes maculosus. Dr. Sobel calls it disseminated ringworm and not pityriasis rosea. Dr. Bleiman takes exception to the statement that coalescence of patches was more typical in pityriasis rosea than herpes maculosus. He regards this case as ringworm. Dr. Pisko calls it pityriasis rosea or herpes maculosus, making no distinction between the two. Dr. Gottheil regards the two last-named affections as distinct; many supposed cases of herpes maculosus do not show the mycelium. Pityriasis rosea is non-parasitic.

Dr. Geyer presented a woman upon whom an operation for carcinoma of left breast was performed nine years ago; apparently well until three months ago, when after a trivial injury resulting in a lacerated wound of said breast there developed nodular growths and pain; pain severe and incessant; the wound was a foul-smelling sore and discharged copiously; the right breast became involved as shown by hardness, pain and nipple retraction, the skin was intact, however; there was no axillary adenitis and cachexia moderate. Dr. Geyser spoke of the remarkable effect of the X-ray in this case. After the sixth treatment there was marked improvement in the appearance of the wound; discharge diminished, now almost dry and the wound converted into a clean one; pain considerably ameliorated; the nodules have disappeared.

In the right breast the hardness is only slight and nipple retraction no longer apparent. Dr. Geyser has great faith in this mode of treatment and believes it especially indicated in so-called inoperable cases. One disagreeable feature was the possible production of dermatitis with or without slough. He would guard against its occurrence by the use of rubber shields instead of metallic ones, which he believes are better for the purpose.

Dr. Cocks said that X-ray work was still in its infancy; he thought it had a certain field in superficial growths, but in deep-seated tumors, he failed to see how it could influence the existing adenitis.

Dr. Kinch said that X-ray burns were usually deep seated and produced a condition known as white gangrene; he related a case of sarcoma of jaw which got well after ligation of the carotid. Dr. Gottheil believed the left breast to be tuberculous; it was too soon to speak of actual results in this field of work; apparent good results are often followed by relapse, and dermatitis and gangrene have developed six months after application. Dr. Sobel expects much from the X-ray treatment; better results were to be expected in superficial growths; with deep-seated ones he would give preference to surgical methods. Dr. Abrahams regarded the left breast as tuberculous; the absence of adenitis and of nipple retraction and the general appearance did not favor diagnosis of cancer. The X-ray is destined to remain as a permanent therapeutic agent; it surely ameliorates the pain, influences symptoms and converts sloughing tumors into dry and clean ones.

Dr. Geyser will report subsequently on microscopical findings.

Dr. Abrahams presented a case for diagnosis: Female, eleven years ago, sustained a slight injury to finger-tip, followed six months later by discoloration of finger-nail; the nail has so remained; it is bluish, the matrix bulges and there is considerable pain, which affects the entire arm; the finger-tip is constantly wet with perspiration; in all other respects finger is normal. Treatment of no avail. Dr. Abrahams believes it to be a trophoneurosis.

In the discussion the consensus of opinion was that it was a new growth, exact nature unknown; it was suggested to remove a portion of matrix for examination. Dr. Geyser spoke of a somewhat similar case which showed a dark spot upon an X-ray negative and when operated upon an encapsulated needle point was found. Dr. Geyser will obtain a radiograph for diagnostic purposes.

Dr. Gottheil showed a specimen under the microscope; a hair removed from the scalp of a patient with typical alopecia areata showed mycelium.

PHILADELPHIA.

City Vaccination Bills.—The money available for liquidating the smallpox expenses of the city is now being rapidly paid out. One of the regular vaccine physicians has received $2,368.80 for 5,922 vaccinations between July 31 and December 31, 1901. Other bills were $1,500 and $1,000 for the same period. The auxiliary corps of vaccine physicians appointed during the height of the epidemic have not yet been paid and some of them are expressing much dissatisfaction.

Children's Hospital.—A recent staff change has been the election of Dr. James P. Hutchinson as visiting surgeon.

Calcium in Tuberculosis.—At a recent meeting of the Pathological Society Dr. A. C. Crofton detailed the results of a few experiments with calcium and tuberculous material made during the investigation of another subject. The fact that it is impossible to prepare albumose free from calcium except by chemical means and that such albumose has a remarkable chemical affinity for calcium led to the question of whether calcium was excreted by tuberculous subjects. Experiments on dogs shows that the excretion of calcium is considerably increased by tuberculosis, especially when the breaking down of tissues is active. When decalcified albumose is injected into a subject a violent reaction with high temperature similar to the tuberculin reaction is obtained. If calcium be added no reaction follows. It is apparently true, then, that a protective process is caused by calcium in tuberculous subjects, the changes causing high temperature, etc., being essentially neutralized by that drug. The therapeutic suggestion based on this fact is that calcium salts in fairly large doses be given to tuberculous patients.

Regulation of Barber-Shops.—It is stated that Councils are soon to consider a bill providing for the sanitary regulation of barber-shops in this city. It provides for regular visits of inspectors after the shops have been registered and licensed.

Philadelphia Neurological Society.—At the March meeting a paper by Dr. S. Weir Mitchell described "The Muscular Factors Concerned in Ankle-clonus." When examining a patient of Dr. Hinsdale it was discovered that the soleus muscle alone was active in producing ankle-clonus, the gastrocnemius, as before supposed, having no part in the movement. This led to the investigation of the same question in other spastic cases and in all the same result was obtained. Proof can be obtained by grasping the muscles separately, preferably in thin persons. The explanation is thought to lie in the fact that the soleus is inserted on the tibia and is not relaxed when the leg is flexed as is the gastrocnemius because of its insertion on the femur.

A New Scheme of the Zones and Centers of the Human Cerebrum.—Dr. Charles K. Mills presented a preliminary note, with explanatory drawings, of the new scheme of the cerebral zones on which he is now at work. The scheme is based on the recently-acquired knowledge of cerebral localization in conjunction with Flechsig's association areas. Dr. Mills emphasized his firm belief in the theory and in the further possibilities of localization. The location of a higher psychical area, a region for concrete concepts, etc., were detailed. Dr. Mills believes that the stereognostic sense, with other similar powers, belongs to the group of concepts. It is a sense built up out of others by evolution, and is really a combination instead of an entity in itself. To this class belong orientation, object-imagery, etc. The new scheme of the cerebral zones is to give definite methods for investigation concerning the higher psychical centers and concrete concepts.

Dysentery.—The meeting of the County Medical Society, March 26th, was devoted to a symposium on dysentery, Dr. William Osler, as the invited guest of the Society, speaking on the amebic variety of that disease. Following the meeting a reception was tendered Dr. Osler at the University Club.

Amebic Abscess of Liver with Rupture into the Lung.—This case, with exhibition of the patient, was reported by Dr. L. N. Boston. The patient was a man of twenty-one, a soldier, returned from the Philippines. He had had a cough for some time, followed by many of the symptoms of lobar penumonia, the temperature, however, was subnormal. Amebæ were found in the profuse expectoration. Recovery has progressed very satisfactorily.

Bacillary Dysentery.—Dr. Simon Flexner spoke on this subject. Etiologically there are the catarrhal forms, with no specific cause, the acute, diphtheritic, or pseudo-membranous, and the chronic. In the acute form a specific organism not found in the normal intestine and which can be separated from the typhoid bacillus and the colon bacillus is found. This is the bacillus which has been isolated in Japan, the Philippines, Germany, Porto Rico, and this country. The great proof of the existence of this organism is that its presence causes the development in the blood of the property of agglutination similar to that property in typhoid fever. When these cases go on to ulceration, as they frequently do, the organism is detected with difficulty and the specific reaction with the blood is very difficult to obtain. In cases of dysentery not of acute origin this bacillus is not found, but the ameba coli is obtained. The differentiation of the two is based on the definite series of clinical phenomena, the pathological changes, the finding of the micro-organisms, and the agglutination caused by the one. The bacillary form can rarely be produced in animals. Death is caused, but dysentery does not develop, except rarely in a mild form. An interesting question has been regarding the variety of the terminal dysentery in many cases of Bright's disease, cirrhosis, etc. This has been determined to be the bacillary form.

Amebic Dysentery.—Dr. Osler spoke first of his having recognized and had charge of the first case in this country in 1890. He briefly reviewed the last twelve years' experience with dysentery at the Johns Hopkins Hospital. During that time 93 cases were admitted, though probably twice that number were treated at the dispensary. Of these only 11 were females and 9 were colored. Patients do not often die of dysentery *per se*. Of the 93 cases 23 had abscess of the liver. The points of difference from the bacillary form are well marked. (1) The amebic form does not occur in widespread epidemics; (2) it rarely runs an acute course; (3) it kills more frequently by its complications; (4) the amebæ are found in the stools or liver abscesses; (5) the serum reaction with Shiga's bacillus is absent in the amebic form. Of the two cases of hepatopulmonary abscess occurring in the 93 cases, one recovered and one died. The question in these cases is that of operation, but the physical signs are very obscure. This for one reason is due to the process being high in the vault of the diaphragm.

Treatment of Dysentery.—Dr. H. A. Hare spoke on this subject. As to diet, milk is not always as useful in diarrhea as is thought, from the fact that curds are formed, which prove irritating. If given in dysentery milk should be well diluted or peptonized and given frequently and in small quantities. Dr. Hare then considered briefly several plans of internal treatment—that by ipecac, the purgative plan, and intestinal antiseptics being the chief. Each of the first two acts well in certain cases. The third does not fulfil the claims made, antibacterial serum in the bacillary, and quinine in the amebic form may be of service. Local treatment is of great value. Dr. Hare has had good results from the use of sulphocarbolate of zinc, gr. xx to the pint of irrigating fluid. This is followed by a ten-grain iodoform suppository. The irrigation must be given high and *slowly*, at least fifteen minutes being used and a longer time is still better. This point was also emphasized by Dr. Osler. A hydrostatic pressure of six inches or a foot is sufficient; a large quantity of fluid can be injected high in the bowel if these precautions be taken.

CHICAGO.

Autopsy on the Late Dr. Christian Fenger.—The autopsy on Dr. Fenger confirmed a diagnosis made by a skiagraph last fall. At that time he had an attack of colic, which he thought might be attributed to gall-stones, and a skiagraph taken by Mr. Fuchs, the expert skiagrapher, showed small dark shadows in the region of the gall-bladder. Three gall-stones were found in the gall-bladder at the autopsy.

Influenza.—The so-called "pink eye," which has been increasing in prevalence for some weeks, is only another manifestation of the influenza bacillus. The Department of Health advises that every case of "pink eye" be at once subjected to a bacteriologic examination for the influenza bacillus. If this be found in the secretions, the indication for treatment is obvious, and a cure may be effected within forty-eight hours. These examinations are made in the laboratory for physicians without charge and the results are telephoned without delay.

Smallpox Among Negroes.—The Commissioner of Health reports that with only 1.75 per cent. of the total population of the city, the colored contingent has furnished nearly 80 per cent. of the last group of smallpox cases. Between March 4th and March 22d there were 34 cases discovered, 7 white, and 27 colored.

An Accredited College.—The Royal College of Physicians of London and Royal College of Surgeons have placed on their limited list of accredited colleges the Northwestern University Medical School of Chicago.

Radical Operation in Chronic Otorrhea.—At a meeting of the Chicago Medical Society, held March 26th, Dr. William L. Ballenger presented two cases of chronic otorrhea healed by the radical method. The first was that of a man aged twenty-six, who had had a chronic discharge from the right ear for eighteen years. The infection originated from an attack of scarlatino-diphtheria. Local treatment was of no avail. Patient was refused life insurance on account of the chronic otorrhea. He was operated on at the West Side Hospital, December 28, 1901, by the Swartze-Stacke or radical method. There was considerable granulation tissue in the middle ear, attic, antrum, and mastoid cells. The roof of the antrum was necrosed. The handle of the malleus and the long process of the incus had been destroyed by necrosis and were removed. All granulation tissue and necrosed bone were carefully removed also. The post-superior incision in the cutaneous meatus was extended for about one-quarter inch into the concha of the auricle. An incision at right angles to this was made in the concha, thus converting the incision into a T-shaped one. The cartilage and fibrous tissue in the angles of the "T" were dissected away to render the skin-flaps thin, so as to afford plenty of room at the conchal opening for dressing and subsequent inspection of the antral and mastoid wounds. The meatal skin-flaps were anchored by deep silkworm sutures, and the post-auricular incision closed. A dry iodoform gauze dressing was introduced through the conchal-meatal opening and the external dressings and bandages were applied. Moderate orbicular and facial paralysis appeared on the sixth day after the operation and disappeared on the sixteenth day. Thirty-one days after the operation the antral mastoid wound was dry and epidermized. The mucosa on the inner wall of the middle ear was left intact and still secretes mucus. There is some tubal catarrh which still persists. The case was shown to illustrate the advantages of doing the radical operation and closing the post-auricular wound at once, applying the dressings through the conchal-meatal opening. External dressings may be dispensed with at the end of from ten to twenty-one days, thus enabling the patient to return to his avocation with a minimum loss of time. The disfigurement by this method is slight as compared with those cases dressed through the post-auricular wound. The second case was that of a boy, aged twelve years. Aural discharge began when one year old, following an attack of scarlet fever. Three years ago he was advised by Dr. Chisholm of Baltimore to undergo the radical operation. The operation was done January 6th at the West Side Hospital, in much the same manner as described in the first case, except that the incision was not extended so far into the concha. Four weeks ago he had an attack of mumps which reinfected the mastoid antrum and wound, the surface being red and granular. This is subsiding, however, and will no doubt in a short time regain its former condition and become dry and epidermized.

Health Department Receives Gold Medal from Buffalo Exposition.—Chicago's Health Department again has won glory in an international exhibition, Commissioner Reynolds having received from the directors of the Buffalo Exposition a certificate awarding to his department the gold medal on the exhibit of means used in sanitation and the handling of contagious diseases. Dr. Reynolds had on view maps, charts, samples of the literature circulated by the department, specimens of the postal cards used, and other articles used by the department in its work against disease, and the superior jury was unanimous in giving the palm to the Chicago department. The medal will be forwarded on payment of the cost. The department won a similar prize at the Paris Exposition. All the large cities were in the competition.

Will of Dr. Fenger.—According to the will of the late Dr. Christian Fenger, he left $110,000. The larger proportion of this amount is invested in real estate. His wife is made the sole executrix without bond.

Translation of Dr. Senn's Book into Spanish.—Dr. Juan Redondo, of Madrid, an eminent surgeon, has translated Dr. Nicholas Senn's book on the Spanish-American War into Spanish. We regret to note that the illustrations which appeared in the original volume have not been incorporated in the Spanish edition.

Resolutions in Memory of Dr. Fenger.—The following resolutions were adopted by the Medical Staff of the Evanston Hospital, on the death of Dr. Christian Fenger: "*Resolved,* That in the death of Dr. Fenger the Hospital loses one of its ablest counselors and most brilliant surgeons. For his distinguished services in pathology and surgical science he was knighted by an appreciative King, and honored by the profession of two continents. The works of our eminent associate are his grandest memorial, and their influence the fittest benediction. We do not attempt to measure the ennobling effect of such a life, nor to fathom the far-reaching power of such enlightened service as his to mankind, but would simply offer this expression of his worth, that, as a testimonial, it may be entered upon the minutes of the Evanston Hospital Association and extended to his family as a mark of our sympathy and esteem."

Communicable Diseases of Children.—The contagious diseases of childhood continue to be unusually prevalent; scarlet fever especially is endemic in many parts of the city, and, together with measles and whooping-cough, is of a severe type, with a high mortality-rate. There were twenty-nine deaths from the four principal communicable diseases of the young reported to the health department last week, as against only fourteen in the corresponding week of last year.

A Study of Goiter.—Dr. William Cuthbertson read a paper on this subject before the Chicago Medical Society, March 19th. He said goiter was a non-inflammatory enlargement of the thyroid body, either general or partial. He divided goiter clinically into (1) vascular; (2) hypertrophic or parenchymatous, (*a*) simple, (*b*) miasmatic, (*c*) exophthalmic; (3) adenomatous, cystic; (4) pneumatic; (5) malignant. The goiter of puberty and pregnancy belongs to the vascular and simple hypertrophic types, and formed the principal subject for consideration in the author's paper. The different forms of treatment of the various tumors of the thyroid gland are about as numerous as the writers on the subject. With the exception of the surgical cases, the treatment of goiter seems to have been purely empirical, no definite classification with its appropriate treatment apparently having been attempted, with the exception of the iodides and iodine having been recognized as a specific. Dr. Cuthbertson found in one case that hydrastis canadensis proved efficacious in effecting a cure in a goiter of pregnancy, and this led him to the investigations which he had detailed. In each of the twenty-five cases of goiter of puberty and pregnancy which came under his care, a cure was effected in from six weeks to three months by the administration of one and one-half grains of the dry extract of hydrastis canadensis, three times daily, after eating. He was well aware that some of these cases might have gotten well without treatment, but he made no selection of them, taking them as they presented themselves. One of the cases which was cured by this means had been treated with iodine and the iodides and with thyroid extract, becoming much worse under both forms of treatment. Immediately on instituting the hydrastis treatment, the patient began to improve and was cured in six weeks. He presented hydrastis canadensis as a new and successful remedy in the goiter of puberty and pregnancy.

Congenital Dislocation of Both Hips.—Dr. Edward H. Ochsner read a paper on this subject in which he reported the case of a little patient suffering from congenital dislocation of both hips reduced by the Lorenz bloodless functional weight method about three and one-half years ago. At the time when the treatment was begun the little patient was four years and three months old. The reduction was accomplished without great difficulty, but the retention of the hips in the true acetabula was very hard to accomplish. Finally this was successful, however, and the thighs, which were at first dressed at 90° abduction with slight overextension, were slowly drawn down to their normal position and in the course of about two years from the beginning of the treatment the functional result was practically perfect. The child could walk without fatigue as well as other children. The lordosis, prominence of abdomen and hips disappeared entirely and the patient became perfectly normal. About three years after beginning the treatment the patient succumbed to an acute gastro-intestinal disturbance and the author was able to demonstrate a pelvis, showing well-developed acetabula in their normal position and the hips held snugly in this by the strong, well-developed capsular ligaments, proving that in this instance, at least, not only a practically perfect functional result was obtained, but also a practically perfect anatomical result.

Foreign Bodies within the Eyeball.—Dr. A. B. Hale reported a case in which a piece of steel had penetrated the eyeball of a man seventy-seven years of age. It was located by X-ray photographs. On the physician's advice the patient consented to enucleation of the eye sixty hours after the injury, before inflammation had shown itself. Treatment resolves itself into three methods: (1) The eye may be left alone. This was discussed historically and clinically, and repudiated for fear of sympathetic inflammation. (2) Enucleation, which was done, and the reasons therefor given. (3) Use of the magnet. Reasons were given why the magnet was not applied in this particular case. An analysis of over a hundred cases in recent literature was given to show that the visual results from the operation are not so good as to warrant subjecting an old man near the grave to the severe operation.

CANADA.

Menace to the Health of Montreal.—Mr. Robert Watchorn, the Special Immigrant Inspector who has charge of all the immigrant inspectors from Sault Ste. Marie to Montreal, including Port Huron, Detroit, Niagara Falls, Buffalo and Vanceboro, Maine, has recently given utterance to the following statement: "Ninety-eight per cent. of the European immigrants who are prohibited from entering the United States by the American officials in Montreal and at other points of entry along the border, are suffering from infectious diseases which are the direct result of filth and lack of sanitary methods." This is certainly a startling statement, as it means that Montreal must to a great extent be a dumping-ground for the rejected ones, and as a matter of fact this is happening in Montreal to the extent of forty to fifty per week. The diseases from which these immigrants are suffering are mostly trachoma and favus, and unless our health authorities wish to see the country overrun with this most objectionable class of immigrants they will immediately be up and doing the same as the United States Immigration Department. As a matter of fact Dr. Montizambert, the Director-General of Public Health at Ottawa, has frequently drawn the attention of the Government to this condition of affairs and the desirability of keeping out these incomers so affected. Since last September, when the United States Immigration Department at Washington commissioned a Board of Special Enquiry for Montreal, the condition of affairs has become greatly aggravated, and Montreal is indignant and insists that that city shall not be made to suffer any longer from these objectionable accessions to its population. The Canadian Government should immediately copy the example set by the United States authorities.

A Six-Year Course in Applied Science and Medicine at McGill University.—It has recently been decided by the Corporation of McGill University that students in the Faculty of Applied Science should be placed on the same footing with respect to the double course in arts and medicine as the students in the Faculty of Arts. Two years ago the six-year course was established so far as arts and medicine were concerned. This has now been extended to the students in applied science. Students electing for the combined course in applied science and medicine will take in their third year in the former, in addition to their regular studies in applied science, anatomy, physics and histology. In the fourth year, they will take in medicine, anatomy, physiology, histology, pharmacology and medical chemistry. At the end of the fourth year they will receive their degree of B.Sc. The studies in the fifth and sixth years will be the same as those in the corresponding years in the medical course. At the end of the sixth year, they will receive the degree of M.D., C.M.

Unfortunate Accident to a Nurse.—At the Brockville (Ontario) General Hospital, Miss Jackson, aged twenty-four years, has been a nurse in training. On the night of March 21st, not feeling well, she took two ounces from a stock bottle labeled magnesium sulphate solution. The bottle, however, contained a solution of bichloride of mercury. She at once realized that she had not taken a magnesium sulphate solution and summoned medical aid. Death, however, resulted five hours later.

Contagious Diseases in Ontario for February.—Dr. P. H. Bryce, Secretary of the Ontario Board of Health, has handed out the following statement of the deaths occurring in Ontario for the month of February from contagious diseases: Scarlet fever, 38; diphtheria, 34; measles, 21; whooping-cough, 16; typhoid fever, 25; consumption, 177. The total deaths from all causes was 2,241 as compared with 2,480 in the same month in 1901. There was a considerable falling off in the deaths from consumption as compared with the previous year, which registered 238. Ninety per cent. of the population reported in February, that is, about 769 municipalities.

Personals.—Dr. Don. J. Armour, Toronto, '94, son of Chief Justice Armour of Toronto, who was formerly demonstrator of anatomy under Professor Lewellys F. Barker at Chicago, has recently been appointed senior assistant surgeon at the Belgrave Hospital for Children, London, England. Dr. Armour will continue to hold his position as senior demonstrator of anatomy at University College, London.—The following Canadian practitioners have recently been admitted by examination to membership in the Royal College of Surgeons, England: Dr. Charles B. Shuttleworth, Trinity Medical College, Toronto; Dr. Walter H. P. Hill, McGill University, Montreal; Dr. Henry A. Kingsmill, Western University, London, Ontario.

GENERAL.

Vaccination in London.—The smallpox scare in London has reduced the number of "certificates of conscientious objection to vaccination" from 203,413 in 1898 to about 38,00 in 1901.

> "And thus the native hue of resolution
> Is sicklied o'er with the pale cast of thought."

The Cholera Situation.—In view of the disturbing report made last week of the appearance of cholera at Manila, it is of interest to inform ourselves more definitely concerning the prevalence of this infection. It is reported to be present at Canton, raging at Fatshan and spreading at Seungshan in China. In India during less than five months there have been at Bombay 29 cases, at Calcutta 449 cases, and at Madras 84 cases. During the same period the disease has been more or less constantly present in Java, the Strait Settlements and Turkey. Since the outbreak in Manila 118 cases with 93 deaths have occurred.

Increase of Smallpox.—During the first three months of the present year 25,574 cases of smallpox have been reported in the United States. During the corresponding period of 1901 the number recorded was 11,964. It is also interesting to note that the percentage of fatal cases likewise has more than doubled. The epidemic is insidiously and steadily gaining. Redoubled efforts on the part of health officers and the profession will be needed to stay its progress. Vaccination and isolation must be their watchwords.

Canned Tomatoes Poison.—At Sayville, N. Y., a family consisting of the two parents and four children partook of canned tomatoes on March 28th. All were made ill. One daughter of seven years died in less than forty-eight hours and the youngest, a boy aged four years, is fatally poisoned.

Dr. Burdick's Resignation.—The resignation of Dr. James T. Burdick as surgeon in chief of the hospital at the New York State Soldiers' and Sailors' Home, at Bath, N. Y., which position he has held since April 1st of last year, took effect March 30th. He expects to return to Brooklyn at an early date. Dr. W. L. Babcock has been transferred from St. Lawrence Hospital, Ogdensburg, provisionally, to succeed Dr. Burdick. Dr. A. P. Shellman, Assistant Surgeon at the home, has also left.

Texas Quarantines.—By proclamation of her Governor, a quarantine will be established on April 15th along the entire Mexican border and Gulf Coast of Texas to continue in force until removed by proclamation. The quarantine will apply to all vessels, persons or things coming from places infected by yellow fever, smallpox, bubonic plague or cholera, and all places south of 25° North latitude will be considered infected unless proof to the contrary be submitted to the State health officer.

Gregory Testimonial Banquet.—Arrangements are practically completed for the Gregory testimonial banquet, which is to be held in St. Louis, April 17th. Among others, the following will respond to toasts: Drs. DeForest Willard, Philadelphia; Walter Wyman, Surgeon-General United States Marine Hospital Service; N. B. Carson, President St. Louis Medical Society; J. D. Griffith, President Missouri State Medical Society; Chancellor Chaplin; W. G. Moore and C. H. Hughes. Dr. A. M. Dockery, Governor of Missouri, will preside and will respond to the sentiment of "The State of Missouri." Dr. F. J. Lutz will act as toastmaster. Judging from letters that have been received, it is certain that the affair will be one of the largest of the kind ever held.

Ptomains in Cream Puffs.—Numerous Cincinnati bakeries have ceased manufacturing cream puffs and chocolate eclairs as the result of recent wholesale ptomain poisonings. Last Saturday and Sunday fourteen persons were made dangerously ill by eating cream puffs and chocolate eclairs. City hospital physicians say that the sickness is caused by the fermented cream used in making the cakes.

Philippine Service.—The United States Civil Service Commission announces that the examinations for the positions of agricultural chemist, analytical chemist, physical chemist, physiological chemist, pharmacologist in the Philippines will be held May 6-7, 1902, at places selected in the several States of candidates. For the position of pharmacologist the degree of M.D. is a prerequisite, and, as general requirements, it will be necessary for applicants to show that they have completed the course of studies covered by the B.S. degree. This information should be specifically stated. Salary, first year, $1,800. These examinations are open to all citizens of the United States who comply with the requirements.

Obituary.—Dr. Moses T. Babcock, who had practised medicine in Hammondsport, N. Y., for fifty years, died suddenly at his home there March 31st, aged seventy-seven years. During the Civil War he was Assistant Surgeon of Volunteers.

OBITUARY.

THOMAS DUNN ENGLISH, M.D., LL.D.

Dr. Thomas Dunn English died at his home in Newark, N. J., on the morning of April 1st, and thus closed the long and picturesque life of a man with many accomplishments and diverse activities.

In turn Dr. English had been journalist, physician, lawyer, politician, poet, statesman and author. He was born in Philadelphia on June 9, 1819, and so was well advanced in his eighty-third year. His family, of old New Jersey stock, were of Norman-Irish origin, and in him the characteristics of both races were exhibited. Very early in life he made his first literary essays in journalism, writing for the Philadelphia "Press," but this employment he abandoned temporarily for the study of medicine, in due time securing his diploma as a physician from the University of Pennsylvania. This was in 1839. After a very brief period of practice he began to read law in Philadelphia, where he was admitted to the bar in 1842.

In 1848 he became associated with a humorous periodical called "John Donkey," and in the same year he wrote a work on the French revolutionary movement of that period in collaboration with G. G. Foster. He went to Virginia in 1852, and remained there for five years, his experience in that part of the country resulting in his "Logan Grazier," and other poems. Finally, in 1859, he settled in New Jersey, and resumed the practice of medicine, which he continued more or less constantly to the end of his days, although he did not permit it to interfere greatly with his activities in other directions.

The entrance of Dr. English into political life was effected during the agitation over the question of the Texas annexation, and the ability which he displayed won for him the friendship of President Tyler. In 1863-64 he served in the New Jersey Legislature; in 1876 he received the degree of Doctor of Laws from William and Mary College, Va.; he was elected to the Fifty-second and Fifty-third Congresses as a Democrat.

To the general public, Dr. English was best known by his ballad of "Ben Bolt," which was written nearly sixty years ago, and achieved an extraordinary popularity on both sides of the Atlantic, somewhat to the chagrin of its author, who resented the implication that it was an extraordinarily favorable specimen of his work. He wrote the lines for N. P. Willis, then editor of the New York "Mirror," and the music to which they are generally sung was composed by Wilson Kneass, an actor and singer, who made a small fortune out of the combination. The song in the course of years had gradually fallen into oblivion, when Du Maurier recalled it into vigorous life by his mention of it in "Trilby."

His wide acquaintance with life and his extensive and varied mental cultivation made Dr. English a delightful companion, and he retained his faculties and a wonderful amount of physical vigor almost to the very last.

CORRESPONDENCE.

REVIEW OF DR. D. S. WILSON'S ARTICLE.

To the Editor of Medical News:

Dear Sir—Permit me to call attention to some inaccuracies in the "History of the Army Post Exchange or Canteen" as given by Dr. D. S. Wilson in the Medical News of February 15th.

It is true that at the meeting of the Association of Military Surgeons, held at St. Paul in June last, Major Seamans read his "masterly article" entitled "Observations in China and the Army Ration and the Canteen," and that the Association after discussion unanimously passed a preamble and resolution, offered by Seamans, declaring that "the abolition of the canteen has resulted and must inevitably result in an increase of intemperance, insubordination, discontent, desertion and disease in the Army and that the Association deplores the action of Congress in abolishing the Post Exchange or Canteen, and in the interest of sanitation and morality and discipline, recommends its reëstablishment at the earliest possible date." Colonel Reed of Wyoming is quoted in Dr. Wilson's article as complimenting the theorists and the W. C. T. U. for "doing a good work in their sphere, but they have gotten out of their sphere and have meddled in the laws of the United States in doing so."

Brigadier-General Byers said, "The good women meant to do some good, but they went after it in the wrong way," and then he paid a high compliment to Congress by adding: "I think, however much a Congressman may want to do his duty, he usually counts the vote behind every measure that comes up." "We have got to give the authorities at Washington to understand that we have votes behind us as well as the W. C. T. U." Lieut.-Col. Griffith said, "When this thing comes to a test the Canteen will come again. It is our duty to bring it forward and we must have it. It is a necessity; it may be a necessary evil, but we have them all over the land. We must have the Canteen."

Other members of this Association of Military Surgeons united in endorsing Major Seamans' resolution, which was presented to the American Medical Association, then in session at St. Paul. After a somewhat violent and interrupted speech by the Major, the resolution was voted down by two or three to one.

Some member of the Association then moved that the whole subject be referred to the Committee on National Legislation with directions to consider it and report. This committee consists of three members with headquarters at Washington. The understanding was that this committee would take time and report at the meeting in Saratoga next June. But the very next morning when most of the more than a thousand members of the Association were absent, being at work in their Sections, less than fifty, evidently by some prearrangement, met and heard a report from Dr. H. L. E. Johnson, the only member of the Legislation Committee present, in favor of the resolution which was rejected the day previous. This report was declared by President Reed adopted, and doubtless was adopted by the vote of a majority of the few present, although the negative vote was not called for.

The divergence of this account by an eye-witness from the statement of Dr. Wilson, who was not present, is somewhat remarkable. But President Wyeth's declaration in a letter solicited by Dr. Wilson is entirely correct, that "a decided majority of the members present" voted in favor of the motion.

General Kitchener, the commander-in-chief of the British Army in Egypt, reports that in the long marches of weeks and months over the hot sands of the desert in those desperate fights with the Dervishes of Egypt, his men endured fatigue and exposure better without a drop of grog than when they drank the customary ration, and that in rapid marching, in attack and defense they were quite equal to the Dervishes who have been regarded as the best fighters in the world and who, being Mahometans, were all total abstainers.

It is safe enough to compare Kitchener's opinion regarding the necessity of alcohol in the tropics with that of Major Seamans, who was a short time in China.

Business men assert that laborers in their service, who are abstainers, not only endure cold and heat, hunger, exposure and fatigue better, but they recover sooner than those who indulge in intoxicants. This testimony of practical men who know what they are talking about, combined with the report of Lieut.-General Miles that no harm has resulted from prohibiting the sale of intoxicating beverages in the Canteen, but that the law has been beneficent, ought to over-balance the claim of a few surgeons that the tippling canteen is a necessity and we must and will have it.

I close by quoting the military history of Colonel P. H. Ray, the commandant at Fort Snelling, Minn., near St. Paul, and by giving the reasons for his expressed opinion of the Canteen, mollified into the "Army Post Exchange."

"The published military record of Colonel P. H. Ray, now Commandant of District and Post at Fort Snelling, Minnesota, shows that he served through the war of the Rebellion, entering the volunteer service in Wisconsin Infantry in 1861 and rising from the position of private to that of captain in 1864. He held prominent staff positions during the war and was at Selma and Montgomery, Alabama and Forts Johnson and Raleigh, N. C. He was with the expeditions at Yellowstone and against the Sioux Indians and was stationed at Forts Lowell, Apache, Halleck, Gaston, and McDowell. He had various commands from 1877 to 1897. He was sent by President McKinley on special mission to report on conditions along the Yukon River. He organized the 3rd U. S. Volunteers at Macon in 1898, was promoted to the colonelship and commanded the regiment in Cuba in 1898-'99, and was then assigned to command District and Post at Fort Egbert, Alaska, where he remained till transferred to Fort Snelling.

"At various times he has received honorable mention from commanding officers for deeds of generous daring, and from the President, Secretary of War and Major-Gen. Miles for the efficient discharge of all his duties in the responsible positions to which he had been appointed and which required constant vigilance, sound judgment and great ability.

"His opportunities for observing the effect of intoxicating beverages on soldiers in field and camp have not been surpassed by many if any officers, and his views which he frankly expresses are entitled to consideration and respect."

Here is his opinion of the Canteen, a name which has been mollified into "The Army Post Exchange."

"WAR DEPARTMENT,
"Fort Snelling, Minn.,
"June 16, 1901.

"H. D. Didama, M.D.,

"My Dear Sir—I noted the action of Dr. Seamans at both conventions and regret that he did not confine himself to the truth both in regard to the percentage of drinking men in the Army and that the sale of beer is necessary to provide a suitable ration in the tropics. I believe he was reported in the papers as saying that the ration for the Army was the same for all latitudes. This is not true.

"In my experience I have never found that a drinking place was necessary in any military establishment to maintain discipline or to preserve the health, comfort or content of any command where active operations are being carried on, as I have found such establishments to be a nuisance and often a menace to the welfare of a command in the field. I have often seen them abated with a rough hand and always with good results.

"When stimulants in any form are necessary they should be issued without cost to the soldier and carefully controlled. There is in our Army at the present time better material than in any other army in the world and this if properly handled will make the best soldiers. To secure such result the drinking element must not be encouraged, but on the contrary should be thoroughly suppressed.

"The conditions existing at both Chickamauga and Tampa should be sufficient to deter any sane man from again attempting the sale of liquor in a camp of volunteers. The hard drinkers *will* get drunk and *will* go where they can get whisky so long as they have money; when that is gone they may come to the canteen to get beer on credit. Our best officers get rid of such men as soon as possible, and they are not a factor that should be considered or catered to. In my Post there has been less drunkenness without the canteen than with it, but I attribute the most of this to getting rid of some rough characters.

"In my opinion the worst feature of the canteen is having officers who serve the troops, handle intoxicants that make men drunk, take their money and then sit on a court to try them for *being* drunk. My observation has been that company commanders who may be in charge of a canteen are very loth to prefer charges against men to whom they have given credit with which to buy beer on which to get drunk; for I have seen as much drunkenness in a canteen as I ever saw in a trader's store of the old time.

"I do not think we are called upon to accept 'an alternative,' as some put it, that a canteen is the lesser of two evils; the fact that it is an evil is sufficient to condemn it and to confirm the action of Congress as right and just.

"As long as officers do not countenance it, but consistently punish all drunken offenders, beer drinking will not be popular in the army, rowdyism will disappear and discipline will improve. I believe that medical officers and officers of the Army agree that alcohol in any form should never be used as a beverage in the tropics. I regret that the canteen has caused so much contention and that any part of the Army should be made so offensively notorious, but now the matter is up I hope it may be settled for good and all, not only for the good of the service but for humanity.

"Very truly yours,
"P. H. Ray."

"WAR DEPARTMENT,
"Fort Snelling, Minn.,
"July 18, 1901.

"H. D. Didama, M.D.,

"My Dear Doctor—Yours received. I am grateful to you for the interest and stand you have taken. I hope there will be no more legislation on the subject and that there is an end to retailing liquor to soldiers by any United States official for any purpose. I enclose under separate cover a copy of *Journal of the Military Service Institution* where Captain Lewis touches on the canteen question under the head of 'Discipline in the Army.'

"There is an important point in regard to efficiency which I have not mentioned and that is the effect of beer on the physical endurance of men. Several times within the last ten years I have noticed when extra and continued exertion has been required in marching that in every instance the first men to drop out of the ranks and fall by the wayside have been the beer-drinkers.

"With the development of the long-range weapons and the necessarily greater distances to be passed over under fire under attack, the modern soldier must be an athlete, not only to carry him through the zone of fire but to enable him to shoot accurately. From my own experience I know that drinking beer detracts from the accuracy of the soldier's shooting.

"To put aside all other questions, it would be the height of inexpediency for the Government to make itself a party to the policy that would render a soldier inefficient at a critical time on the battlefield after having maintained him for several years at a cost of over $1,000 per annum. I consider that it is the duty of the officer to prevent the soldier by precept and example, and by punishment when necessary, from incapacitating himself by his own act, rather than indulging him in a vice because some irresponsible party makes a profit thereby. The theory that because the profit on the canteen beer goes to the soldier *mitigates* the evil is not tenable, because it only *aggravates* it by indulging him in unnecessary and enervating luxuries which tend to destroy his usefulness as a soldier.

"If beer makes him a better and more efficient soldier and adds to his endurance, then it should be given him *free* of cost; if it does *not*, but on the contrary detracts from his efficiency, then the profit is no justification for defrauding the United States of his services at the time he is required on the line of battle and he fails to appear 'behind his gun' to do the work for which he has been paid and clothed for years, simply because his officers sold him beer at a profit so that he might eat pie in garrison.

"Very truly,
"P. H. Ray."

Very truly yours,
H. D. Didama, M.D., LL.D.,
Dean of the College of Medicine,
Syracuse University.

Syracuse, N. D., March 1, 1902.

OUR LONDON LETTER.

(From Our Special Correspondent.)

London, March 22, 1902.

CECIL RHODES AND HIS PHYSICIAN—ANTIVIVISECTIONISTS ON THE WAR-PATH—THE TREATMENT OF INCIPIENT INSANITY.

From a medical point of view the illness of Cecil Rhodes, as far as can be gathered from the bulletins, is a trifle mysterious. Some cardiac complaint is more of less plainly hinted at; but at one time it is stated to be angina pectoris, at another aneurism. Dr. Leander Starr Jameson, who is in attendance, is one of Mr. Rhodes' oldest friends. After a creditable career at University College, London, he went out to Kimberly in 1878 to take over the practice of an American physician who had somehow neglected to provide himself with a regular diploma in his native country, and probably thought it not worth while to repair the omission in South Africa. Jameson was soon doing a very large business. Rhodes, who had gone out as an invalid, was then at the beginning of his career as a trader in diamonds which in a few years made him one of the world's millionaires. The two young men lived together and thus cemented a friendship which ultimately caused to South Africa woes as countless as those brought on the Greeks by the wrath of Achilles. For it was Jameson's "raid," as insensate as it was inglorious, which made war inevitable. When, at the suggestion of Rhodes, he gave up medicine to become the administrator of Mashonaland the papers controlled by the gang whom we may call the Colossians here were loud and copious in praise of his energy and diplomatic tact. His Scotch canniness was especially insisted on. Energy he has, but the tact and canniness were a revelation to the more judicious of his friends here who had known him in his earlier days. They were ready to allow him the possession of many admirable qualities, but among the elements making up an attractive character, prudence and even ordinary caution were conspicuous by their absence. Jameson as a young man was impulsive and, indeed, reckless, and those who knew him best felt pretty sure that he would come to grief in his political career. He is a well educated physician and in former days had Oom Paul as a patient. But till this illness of his distinguished friend, it must be many years since he had practised his profession.

The antivivisectionist hounds are again in full cry. A few weeks ago the National Antivivisection Society got hold of a catalogue of apparatus and appliances for experiments on animals issued by the firm of F. and M. Lautenschlager of Berlin. The illustrations are of course of a kind likely to make sensitive people shudder, but after all they are not so harrowing as an ordinary surgical instrument maker's catalogue could be made by the addition of illustrations showing patients under operation. Some 20,000 copies of the catalogue have been sent out by the Society, largely to women. As usual, no hint is given by those responsible for this outrage on public sentiment that the animals who form the subjects of the experiments are made unconscious by anesthetics; nor is it explained that in this country the performance of such experiments, except under anesthetics, is forbidden by law. Victor Horsley has hurled himself into the fray, particularly in defence of Dr. Crile, some of whose experiments on surgical shock were performed in his laboratory. It appears that three years ago Crile was denounced to the Home Office, which has the supervision of vivisection here, by Stephen Coleridge, the moving spirit of the National Antivivisection Society; the matter was fully inquired into and the charge declared to be unfounded. Nevertheless, Coleridge has again been holding up Crile to public execration, and when reminded that the accusation was pronounced to be false, impudently insinuates that the Home Office was deliberately misled by the experimenters. There can be no doubt, however, that Coleridge, though his disingenuous methods of controversy are recognized by intelligent people, is doing harm by shocking sentimental old ladies and making them unwilling to subscribe to hospitals where, it is suggested to them, vivisection is practised. Scientific research is already considerably hampered in this country by legislative restrictions, and it is not surprising that, as Mr. Arthur Balfour publicly stated not long ago, we are falling behind other civilized nations—even such as Italy and Switzerland—in the advance of scientific knowledge.

At a recent meeting of the Edinburgh Medico-Chirurgical Society, Sir John Sibbald, who was for many years at the head of lunacy administration in Scotland, proposed that accommodation should be provided in the Royal Infirmary for cases of incipient, transitory and recent cases of insanity. He pointed out that patients in the early stages of mental disorder are at present almost entirely neglected, and thus a considerable number of them are allowed to fall into incurable insanity who might have been saved from that fate. At present, such cases, if treated at all, can only be treated in asylums. The fact of having been an inmate of a lunatic asylum places on a man or woman an ineffaceable brand which, socially and otherwise, wrecks their lives. No such stigma attaches to a sojourn in a hospital. The patient would, of course, be kept for only a limited time; if recovery does not take place within that period the case must be dealt with as one of chronic insanity. But a short stay in a hospital with rest, good feeding and other therapeutic influences would, Sir John Sibbald holds, give a considerable proportion of recoveries. The scheme would also be highly beneficial in regard to the instruction of students in a subject in which they have under the present dispensation few opportunities of practical instruction. The proposal was warmly supported by the members of the Society, and the principle has been accepted by the governing body of the Royal Infirmary. The arrangement of the details will take a little time, but both the profession and the hospital authorities are committed to the step. The London County Council has for the last two or three years had a similar scheme under consideration. The asylums under their control are huge aggregations of persons in all stages of mental disorder, many not insane at all, their disease being alcoholism. A patient whose mind has given way under an exceptional strain and who, if placed under favorable conditions, would recover in a short time, has no chance in a crowd of mad folk where the influence of his surroundings tends to intensify his disorder. It is probable, therefore, that London will at no distant date follow the example of Edinburgh in providing for the proper treatment of cases of incipient insanity.

FOREIGN SOCIETIES.

British.

LIGATURE OF THE LEFT CAROTID ARTERY IN TREATMENT OF ANEURISM OF THE ARCH OF THE AORTA—TRAUMATIC RUPTURE OF THE PROSTATIC URETHRA—TUBAL GESTATION—DERMOID CYST OF THE OVARY IN OLD AGE—INTRACRANIAL THROMBOSIS AS A CAUSE OF DOUBLE OPTIC NEURITIS IN CHLOROSIS—CYSTOID CICATRIX FOLLOWING CATARACT EXTRACTION—SCLERODERMA AND RAYNAUD'S DISEASE—DIAGNOSIS OF SCARLET FEVER.

The medical societies of the United Kingdom during January and February were redundant with interesting meetings. The communications presented were numerous, but the following may be regarded as the most representative.

C. Heath, at the Royal Medical and Chirurgical Society, February 11th, presented two cases of ligature of the left carotid artery for aneurism of the arch of the aorta and showed postmortem specimens of four cases. The two patients whom he presented were the sixth and seventh upon whom he has performed the operation. The sixth was a woman, sixty-one years of age, admitted in July, 1890, to the Mile End Infirmary, with all the typical symptoms of aneurism of the arch. She was kept in bed and given iodide of potassium for many weeks, without result. She was obliged to sit up in bed, with the knees drawn up and the head resting upon them, for leaning back caused dyspnea and stridor. The left carotid artery was tied without an anesthetic November 16, 1890. Three days later the noisy respiration became quiet and the dyspnea on leaning back disappeared. Six days after the operation she slept seven hours consecutively. Two months after, in January, 1891, there was some return of pain. The following February the pulsating tumor above the sternum had decreased and the patient was able to lie and sleep in any position. Improvement continued and she was discharged at her request August 8th. She was admitted to the London Hospital September 3d, when the pulsating tumor could just be felt above the collar-bone. She died suddenly on November 29th, more than a year after the operation. The seventh case was that of a man, thirty-six years of age, admitted into the University College Hospital November 4, 1898, with the same disease, showing well-marked physical signs, which included "tracheal tugging" and a blowing systolic murmur over the aneurism. The lungs were healthy. During November, December and January the patient had suffered pain in the shoulders, back and neck. The aneurism at first diminished, but in January it increased and a definite pulsating tumor appeared beneath the pectoral muscle below the right clavicle. The left carotid artery was tied with silk under eucaine beta on January 18, 1899. On the 20th the pulsation in the aneurism was less and daily improvement followed until February 1st, when the patient returned to the medical ward with the operation wound healed. The pulsation in the aneurism was now much less distinct. The patient was free from pain and had slept well since January 20th. On February 16th the patient had pain in his chest; the temperature was 103° F. the next day, and March 21st he died with symptoms of rapidly-developing acute phthisis. The aneurism gave no trouble and was daily less evident. The four specimens presented the following features: The first was from a man on whom the operation was performed in February, 1872. It was followed by a year of great improvement, when under hard agricultural labor the tumor began to grow again, and finally burst four and one-half years after the operation. In this case the autopsy was made three days after death in very hot weather and the decomposed clots were unfortunately washed away. The second specimen was from a man, thirty-eight years of age, who was operated upon in March, 1890, and died suddenly on May 12th following. This aneurism was filled with laminated clot. The third specimen was from the case just described and showed an aneurism the size of an orange almost completely filled with laminated clot. The fourth specimen was from the seventh case and showed an aneurism of about the same size with a small secondary aneurism at the root of the innominate artery. Both were nearly filled with the same kind of clot. The center of the larger aneurism was filled with soft clot. From his experience Heath maintains that ligature of the left carotid artery undoubtedly produces an immediate effect upon aneurism of the arch. He thought that the ultimate solidification of the aneurism, though in one sense a method of cure, accounted for the sudden deaths which occasionally occur some months later, owing partly to pressure effects and partly to the induction of syncope.

E. Owen, at the Medical Society of London, February 10th, showed a boy, aged seven years, on whom a pile of coffin lids had fallen October 21st last, and caused a rupture of the prostatic urethra. He was admitted to St. Mary's Hospital in grave collapse, taken into the operating-room where the house surgeon treated a compound fracture of each tibia. That night blood was found oozing from the urethra and no urine had been passed. The house surgeon tried to introduce a catheter and, although he did not enter the bladder, drew off a small quantity of bloody urine. There was no swelling in the perineum. No other steps to relieve the bladder were taken that night, but when Owen saw the boy next day he had him placed at once on the operating-table and unsuccessfully tried to pass a catheter. He then attempted to open the urethra through the perineum, but failed to find it. He therefore made an incision between the recti abdominis muscle below the peritoneal reflexion where he discovered a quantity of bloody urine around the base of the distended bladder. He next incised the bladder and let out much urine, passed a large drainage tube through the floor of the pelvis and out by the peritoneal incision without further investigation. A week later the house surgeon put the boy under anesthesia, passed his finger through the suprapubic wound and out by the perineal incision, demonstrating a laceration of the prostatic urethra. At this time he was able to introduce a No. 7 (English) silver catheter through the urethra and into the bladder. The wounds gradually closed and the boy now passes his urine in the proper way. There is no indication whatever of the prospect of a traumatic stricture.

J. Bland-Sutton, at the Obstetrical Society of London, February 5th, read notes of two cases of tubal gestation. The first was diagnosticated by the woman's husband, who was a medical man, confirmed by Bland-Sutton, and removed before rupture. The tube was larger than usual owing to the contained blood mole and the unusual size of the amniotic cavity, which contained a misshapen ovum. The second case had been actually diagnosed by the patient herself, and reminded the author of an artisan's wife, whose husband had also made a diagnosis after reading his "Diseases of the Ovaries and Fallopian Tubes." The patient was thirty-six years old, had been confined in 1891, and had had regular menstruation until July 5, 1901, when a period was missed, and the patient suspected extra-uterine pregnancy. Severe abdominal pain followed two cycle rides. Bland-Sutton was called into consultation. He confirmed the diagnosis and on July 19th removed the left tube and ovary with several ounces of fluid blood in the pelvis. The ampulla of the tube contained a clot as large as a walnut. The celomic ostium was large enough to admit a goose quill and blood leaked freely from the opening during the operation. The walls of the tube were extremely thin, but had not ruptured. Typical villi were found at the placental site.

A. Routh showed a dermoid cyst of the ovary of cocoanut size which had been removed through the vagina from a fifty-three-year-old patient. He asked the members of the Society to state their experience as to the best method of treating the vaginal incision after the pedicle had been ligatured and returned. He usually closed the vaginal incision and inserted a gauze drain, but sometimes closed it completely. In the discussion the following opinions were advanced: P. Horrocks, the President of the Society, questioned whether posterior colpotomy was as good as abdominal section for the removal of tumors in general and dermoid cysts in particular. It is true that it may be easy to remove a dermoid through the vagina, but one can never tell beforehand, and, if the abdomen has to be opened to complete the operation after the cyst had been incised from below, there would be increased risk of soiling the peritoneum with the contents. In his experience such contents were occasionally more virulent than the contents of ordinary tumors. Bacteriological investigation, however, had not resulted in the discovery of any specific or special pathogenic microbe. He prefers, after a posterior colpotomy, not to close the opening, but to drain with sterilized gauze. If the opening were very large it might be partially closed. Dr. Champneys thought that the treatment of the vaginal wound should depend upon its size. If large, it should be partly stitched and the balance drained; if small it should be drained only. He now treats the pedicle of cysts removed by colpotomy by pressure forceps and gauze drains without ligatures, and finds the result very satisfactory. The pressure forceps must remain in position about forty-eight hours. They thus assist the drainage. G. E. Hermann said that the special danger attending the fouling of the peritoneum with the cyst contents was due to the proneness of dermoids to suppurate. Apart from this their contents were but slightly irritating. He thought that after removing a cyst through the vagina, drainage is not needed unless suppuration has occurred or unless the cyst contents were known before to have fouled the peritoneum. Routh closed the discussion by stating that he prefers not to use a clamp but to draw the cyst outside of the vulva, retroverting the uterus, and then to ligate the pedicle at leisure. All tension of the tissues was thus easily avoided.

C. O. Hawthorne read a paper at the Ophthalmological Society, January 30th, in which he adduced arguments in favor of regarding intracranial thrombosis as the cause of the double optic neuritis sometimes seen in chlorosis. Sir W. Gowers, in the discussion, recalled the fact that he was the first to point out the association of double optic neuritis with chlorosis, but in such cases there were no true cerebral symptoms excepting headache. He doubts the possibility of a thrombosis existing without cerebral symptoms involving at least the sixth nerve. Thrombosis might cause optic neuritis and chlorosis might do so likewise, but to aver that the latter caused optic neuritis by thrombosis was a very wide statement. That chronic bone disease causes optic neuritis is an unquestionable fact but a great mystery. In such cases there was often no evidence of sinus thrombosis. Middle-ear disease may also cause optic neuritis, but not necessarily by sinus thrombosis. Was it possible that disease of the spinal cord and ear disease brought about optic neuritis in the same way? Cerebral tumors often cause optic neuritis, but after death there is no thrombosis. Thrombosis might behave like tumor when there was septic contamination with infective tendency. Embolism is associated with septic endocarditis, but never with simple thrombosis in the artery. J. Taylor asked how cavernous sinus thrombosis could possibly exist without proptosis and why it should affect both sides. The good effect of iron and aperients in chlorosis supports the belief that the optic neuritis is due to changes in the blood. Hawthorne in conclusion said that some patients with chlorosis died suffering from optic neuritis and in these there was nothing but thrombosis at present to account for it. He thought that the obstruction need not necessarily be in the cavernous sinus, but if it were he would expect proptosis.

G. A. Barry read a note on the treatment of cystoid cicatrix following cataract extraction, saying that it is not always possible to prevent this condition after the operation. Their occurrence is a source of danger to the eye on account of the way in which they facilitate the entrance of germs. Statistics show that it is present in two or three per cent. of all cases operated on. As a rule the opening is very small and can be seen readily if the conjunctiva is dissected up. For the treatment he prefers to dissect up the conjunctiva, turn it down as a flap, then with the cautery to burn gently the small opening and at once replace the flap. He has always seen this procedure cure the condition and regards it as preferable to all others.

W. Ewart, at the Harveian Society of London, February 6th, read the clinical history of a case of scleroderma associated with Raynaud's disease with special reference to treatment. The woman was thirty years old, under observation since November, 1900, having up to that time suffered for five years with mild symptoms of Raynaud's disease and from aggravated dyspepsia with gastric and cardiac attacks. These latter had been much more severe during the last six months. During this same period she became aware of tightening of skin of the hands, feet, face and shoulders. Dr. Lea Dickinson had treated the case at the end of 1900 and had then observed early symptoms of scleroderma, the first alteration being in the facial outline and expression, which had also been noticed by her husband four years ago. Since her admission to St. George's Hospital on January 2, 1902, she had made considerable progress. The face had lost much of the pointed aspect and was smooth and oval, the lips again supple for articulation, smiling and whistling. The fingers and wrists had ceased to be rigid and, indeed, were freely movable, and she could once more stoop to the ground so as to reach her feet. The treatment had been chiefly hygienic for the visceral and thermo-mechanical for the cutaneous trouble. She had been kept in bed, fed on light food, wine, olive oil and whisky, which were well digested. The hands were kept oiled and gloved and perpetually in contact with a hot-water bottle inside of a bag of wool except for the periods of passive movements of massage and of skin massage. The local asphyxia of the fingers had been quickly remedied and pliability of the skin restored while the extract and cardiac symptoms remained quiet. The medicinal treatment had been diaphoretic and vaso-relaxant. The drugs were nitroglycerin, spirit of nitrous ether, acetate of ammonia, and occasionally mercury. After a few days she was allowed to get up for part of the day and to exercise. In her case the scleroderma had preceded the Raynaud's disease by several years as shown by the history of the minute scars on all her finger-tips. Emaciation had been marked and the thyroid was small.

J. M. Day, at the Royal Academy of Medicine in Ireland, January 24th, read a paper on the diagnosis of scarlet fever, saying that it is far more difficult than formerly when the disease was severer and of more marked type. The chief symptoms of scarlet fever were vomiting, sore throat, elevation of temperature, frequent pulse and a rash. If scarlet fever is present the red punctiform appearance of the pharynx, soft palate, tonsils and hard palate would be found. The pulse was quick even in the mild cases. The rash is never found in the circumoral zone, that is, about the tip of the nose and the mouth. The skin is usually dry, but sweating may occur in rheumatic subjects. When the disease is accompanied by gastric catarrh, the tongue is furred. Scarlet fever may occur a second time without eruption. Desquamation may commence on the sixth day or be delayed until the twenty-first. It spreads centrifugally from various points. Scarlet fever may be confounded with roetheln, measles, septicemia, urticaria, erythemia, rheumatic fever, meningitis, enteric fever, and drug rashes.

SOCIETY PROCEEDINGS.

HARVARD MEDICAL SOCIETY OF NEW YORK CITY.

Stated Meeting, Held February 22, 1902.

The President, William B. Coley, M.D., in the Chair.

Errors and Difficulties in the Diagnosis of Surgical Conditions of the Liver and Biliary System.—This was the paper of the evening, and was read by Dr. Charles L. Gibson, who discussed from a practical and clinical standpoint the present position of the diagnosis of hepatic and biliary conditions. The paper will appear in a subsequent issue of the Medical News.

In the discussion Dr. Edward M. Foote said that what is especially needed at this time is the collation of actual experiences in the surgical treatment of biliary conditions. Of theory in the matter there has been plenty and the advance of practical surgery now depends on clinical data. Dr. Foote considers that it is the discussion of actual errors and difficulties, especially in the recognition of conditions supposed to be present, that will advance biliary surgery.

Gall-Stone Fever.—In closing the discussion Dr. Gibson said, with regard to the intermittent fever which occurs with gall-stones, that its character is often misstated. Gall-stone fever is said, even by good clinical authorities, to resemble malaria. This is untrue. In Dr. Gibson's experience it resembles a pyemic fever and has not the regularity of malarial fever. There are series of rises and falls in temperature accompanied by sweating stages and a sense of subsequent depression. It has often been said on theoretical grounds that when the common duct is blocked the gall-bladder may be expected to be found dilated. Of late years the realization has come that this is seldom or never true and that when, for instance, it is stone that blocks the common duct, the gall-bladder is usually found tightly contracted. It does not often happen that a stone blocks completely the common duct. The contractions of the gall-bladder are able to force some bile past the obstruction. The presence of stones in the gall-bladder has usually given rise to a chronic inflammation and this chronic inflammatory process leads to irritative contractions of the gall-bladder and the formation of contractile tissue in its walls that inveterates the contracted condition. If an obstruction occurs at the papilla of Vater and the gall-bladder is normal, it will be found distended with bile. Dr. Gibson has found the gall-bladder usually not much larger than the last two joints of the little finger and firmly contracted.

The X-Rays and Malignant Growths.—Dr. William J. Morton then read a provisional report of cases with notes on the treatment of malignant growth by the X-rays. The first case discussed was that of a patient suffering from an epithelioma of the cheek. This had run a very persistent course. It was first noticed over fifteen years ago and then, as the result of cauterization, improved somewhat. Afterward it was treated with arsenic paste for a time and was so much improved that it seemed to be cured. Later it broke down again and for this last year produced great disfigurement and considerable loss of tissue. Before treatment with the X-rays there was hardening of the tissues for three-quarters of an inch beyond the edge of the ulcer, all of which has softened as the result of about three weeks of treatment with the X-rays. Sections of the growth at the edges of the ulcer examined by a competent pathologist are shown to be characteristically epitheliomatous and photographs of these sections were exhibited. The case is not cured, but so much improvement has come and there is so much less discomfort from the ulcerative process that the patient is enthusiastic over the new method of treatment.

Recurrent Sarcoma.—Dr. Morton's second case described was a young woman suffering from what proved to be sarcoma of the elbow. The first symptom noticed was a painful condition of the elbow-joint diagnosed and treated as rheumatism. After a time considerable swelling developed and it was thought that tuberculosis was present. Excision of the joint was practised, but sections of the tissues showed that the process was sarcomatous. The arm was amputated then in the upper third. After a few months the set of pains resembling those that first occurred in the left elbow were noticed in the right. A similar swelling of the joint developed. A Roentgen radiograph of the subsequently amputated arm had been taken and this was compared with the radiograph of the suffering right arm. The two showed the same abnormal characteristics, with disturbance of the light and dark areas in the bone that showed the existence of similar pathological conditions. The right arm was submitted to the X-rays and after the second treatment the pain completely disappeared. It has been treated for a month and the swelling has disappeared and now the arm can be used entirely as if nothing were the matter. The patient is able to swing it, lift weights and do everything as before. Meantime sarcoma has developed in the stump of the amputated arm. This is under treatment with the X-rays, and though the case is not definitely cured great improvement has been obtained.

Carcinoma of Breast.—The third case described was that of a patient who suffered from hard tumor of the left breast which developed in the part subsequent to an injury incurred while bicycle riding. The glands were found enlarged in the axillæ and these with the tumor in the breast were removed. Some six months later recurrence took place and the entire left chest became infilitrated with the neoplasm. There were evidently also metastases to the lungs. The patient complained of intense pain darting to the back. The other breast became brawny, showing the presence of hard nodules, and was evidently involved. Pain was one of the most prominent features in the case. Even large quantities of morphine did not prove sufficient to allay it and the patient was almost in despair. This pain ceased entirely after the first exposure to the X-rays. The tumor in the left chest had broken down and an extremely fetid discharge made life additionally uncomfortable for the patient and her friends. The odor of this discharge ceased almost entirely after the first few treatments. The discharge was increased at first and even portions of the tissue came away in it. Instead of a state of intense suffering the patient became quite comfortable and now the brawny feeling all over the chest has given way to the flaccidity of healthy skin. In a second case of mammary carcinoma the patient had fallen and hurt herself on the right breast. She noticed shortly afterward a hard nodular growth in the breast and, fearing to see a surgeon, applied to an osteopathist. He reduced the growth by manipulation, but it recurred and became extremely painful. Two months ago her pain was so great that she had to get up at night and could only compare the shooting pains in back and shoulder to continuous neuralgia; whenever the twinges of acute pain were not present there was a dumb ache which was almost unbearable. As the result of two or three applications of the Roentgen rays the acute pain ceased and the patient's life became much more comfortable. A reduction of over one inch in the circumference of the tumor took place within ten days after the institution of the X-ray treatment. The breast is softer than before, the nipple is no longer retracted and the patient is able to button her dress, something she was not able to do for some months before because of the intense pain caused by even this slight pressure. One of the most surprising features of the case is the almost instantaneous relief of pain through the X-rays. A few minutes after they were applied for the first time the patient felt that a weight which had been oppressing her for months was lifted off her. Because of the pain in this case the X-rays were applied with their maximum intensity. Considerable local reaction was noticed in the skin, which became very red and took on appearances resembling those of severe sunburn. The skin did not break down, however, and later became normal in appearance. After treatment for twenty days the size of the growth was reduced, so that it measured only three and a half by two inches instead of five by five inches, as formerly. In this case there was also a neoplastic boss on the sternum which has likewise been reduced in size. This patient was referred to Dr. Morton by Dr. Coley who pronounced the affection a case of typical mammary carcinoma with sternal involvement and absolutely inoperable.

Gastric Cancer.—In the fifth case treated by Dr. Morton the symptoms all pointed to the existence of carcinoma of the stomach and there was even a distinct tumor present in the epigastric region. The patient's sister had died from gastric cancer. One of the main features of the affection was considerable pain, which was lessened after the first application, and after three or four treatments entirely disappeared. It still recurs as yet between the times of treatment, though the patient is able to take food much better than before. Within a few minutes after the application of the Roentgen rays the pain is very much lessened.

Sarcoma of the Head.—Dr. Morton's sixth case was a sarcoma of the temporal bone. This had been operated upon and as much as possible of the malignant growth removed. The recurrence was treated as carefully as possible with caustics, but without any lasting effect. Coley's fluid, the mixed toxins that have given results in a number of cases, was then employed, the tumor was reduced in size, the patient's general condition improved and for a time the outlook was hopeful. Later, however, the sarcoma recurred and spread beyond its original limits, especially in the bones of the skull, so as to make it entirely inoperable. The patient complained of great pain which was almost intractable to ordinary analgesic remedies. Large amounts of morphine had to be used in order to induce sleep, and even then the rest was troubled and unsatisfactory. After three treatments with the X-rays the patient was able to sleep at night and to cut down the dose of morphine usually taken to less than one-fourth. In a week the tumor was very much reduced in size and the broken-down tissue on its surface began to dry up and become absorbed. The case is evidently progressing towards cure and, though the patient has not been under observation for a long time, too much can not be said of the results obtained. If nothing more than relief from pain had been accomplished it would be a great therapeutic victory.

Nodular Carcinomata.—The eighth patient described by Dr. Morton came to him suffering from recurrent carcinoma of the breast. When first seen there was a nodular tumor the size of a pigeon egg, extremely hard and fixed to the rib. It had an angular feel and was beginning also to be attached to the skin. The patient had already had three operations for the removal of such nodules. The glands in the axilla were involved and the surgeons insisted on removing the breast and its glandular connections, but the patient absolutely refused to permit it. After three treatments with the X-rays the nodule in the breast became much less noticeable, its angles became rounded and could scarcely be felt and the tumor was evidently decreasing in size. For four days the patient, owing to social engagements, did not return for treatment; when she came back examination showed that some of the characteristics of the tumor as originally noted were again to be felt and it was evident that only a partial effect had been produced. After this treatment was regular and the nodule disappeared completely in the course of three weeks. This case was under the care of Dr. Coley, who confirms all that Dr. Morton says with regard to it.

Remarks on the X-Rays.—Dr. Morton called special attention to the fact that the X-rays produced almost immediate and complete relief from pain. In this matter they are much better than any of the ordinary analgesics; one patient, who had had considerable experience with both, said that the relief they afforded was as great as that produced by morphine and was much more lasting. This points to the fact that the nerves of sensation of the part are entirely benumbed. The lowering of the nerve function of sensory nerves probably indicates also that all nervous supply to the part may be similarly affected. The nerves along which trophic impulses travel to the new growth are rendered incapable of function, hence the retrogression of the new growth itself. Through the nerves a true paresis of all the protoplasm of the part is effected. The action of the X-rays on micro-organisms would also affect the micro-organism of cancer if it were present. The most important feature of the new growths that are amenable to treatment by the X-rays is superficiality. If the growth is situated in the skin itself or if it is not covered by skin because of ulcerative processes, then the X-rays are sure to be useful. There seems no doubt that epithelioma of the skin can be cured; also broken-down carcinomata of deeper tissues with the portions of the new growth exposed, because of cutaneous sloughing, can be favorably influenced. Superficial sarcomata are also amenable to treatment in this way. Dr. Morton considers that the cases that he has reported show the practical value of the X-rays in all forms of superficial malignant growth and even in some malignant neoplastic processes in deeper tissues. These cases certainly indicate that further investigation of this form of treatment may prove of the greatest possible value and may disclose a successful therapeutic method for affections that have proved obstinate to every form of treatment so far suggested.

Technic of X-Ray Medication.—Dr. Morton said that both forms of radiation, that derived from Ruhmkorff coil, or from a static machine, may be used for the production of the X-rays for the cure of cancer. The tube employed for the X-rays should be Crookes' tube as modified by Jackson. When it is necessary to protect a portion of the exposed surface of the patient from effect of the rays, Dr. Morton uses a screen of block silver or block tin, which is not grounded, nor is the patient insulated. The talk with regard to the dangers that might be apprehended from the use of screens not grounded was started by Nicola Tesla; the fear in the matter, however, is not based on any well recognized principle in physics and the precautions are unnecessary. Dr. Morton prefers the tubes with a high vacuum equal to about a seven-inch air gap. Tubes thus made need not be too strongly actuated. Jackson's modification of Crookes' tube does not deteriorate very rapidly and will produce its effect for a long time. The X-rays should be employed in such a way as to produce a decided effect upon the tissues and yet not cause gangrene. There are certain difficulties and dangers in this matter, to avoid which requires special experience. If the X-rays are used in very strong concentration there is great danger of seriously injuring cutaneous tissues. As the incubation period for gangrene of the skin, after X-ray exposure is from nine to twenty-one days there is great uncertainty as to the results. The operator may be acumulating a series of gangrenous processes that will make themselves felt successively some time after the treatments.

Dr. Gibson said that the experience at St. Luke's Hospital with the X-rays shows that very probably there is some great service to be expected from their use in the treatment of malignant disease, and that further opportunity for the employment of this method of treatment should be looked for so as to decide the possibilities and the limits of their application.

Dr. Walker said that this method of treatment is in the hands of experts as yet and that, while results are promising, so promising as to be almost alluring, the profession must await further results at the hands of men who thoroughly understand the application of the method.

Dr. Coley said that in one case which he had referred to Dr. Morton there was recurrent malignant growth in the bones of the mastoid and temporal regions that made the case absolutely hopeless until the X-rays were applied. The improvement effected was so great as to constitute a subsidence of all discomforting symptoms. The patient is not cured, but is so much benefited that practically all the annoying symptoms have disappeared and the disappearance of the tumor gives great hope that even radical cure may possibly result. Dr. Coley recently saw a case of sarcoma involving the entire front of the abdominal wall from the umbilicus to the pubis. The condition was completely inoperable and seemed absolutely hopeless. Under the X-ray treatment, in Dr. Skinner's hands, the tumor decreased very much in size and became much less annoying. This tumor contained a large amount of fibrous tissue and consequently a slow disappearance might have been expected. In the case of the mammary nodule which disappeared under X-ray treatment in Dr. Morton's hands, Dr. Coley said that personally he had not a single doubt of its malignant character, but he could not obtain the patient's permission to do anything more than remove the nodule. The pathological report after its first removal showed its malignant character. The woman said she would rather die than lose her breast. When it recurred a third time the case seemed hopeless. After scarcely more than a month of treatment no trace of the nodule can be found.

Specific Ulcerations.—Dr. Sturgis said that the epithelioma of the face presented by Dr. Morton looked suspiciously like a specific ulcer of the cheek. He asked with regard to the specific history and said that the general character of the ulceration, its punched-out appearance, its frequent healing and recurrence, its long continuation without involving tissues very widely, its tendency to spread deeply into the tissue rather than advance in the skin itself, all point to the possible syphilitic origin of the affection.

Dr. Foote said that the ulcer reminded him of syphilitic ulcerations that he had seen in this location, and the comparatively non-malignant character seemed to point to the same fact. If the process had been really epitheliomatous, the patient would scarcely have survived for the nearly twenty years over which the history of the lesion extends.

Dr. Coley said that certain of the characteristics were surely those of a specific ulceration, but that Dr. Morton's description of the cure of the induration surrounding the ulcer during the treatment by the X-rays might point to the fact that there had been a radical change in its appearance during the last few weeks as the result of treatment. The long history of the case certainly seemed to throw suspicion on the diagnosis of epithelioma, for lesions as deep as this are wont to be especially malignant in character, and the case would have had a fatal termination long before this, very probably, if it were genuinely epitheliomatous.

Dr. Morton, in closing the discussion, said that the case had come to him as one of epithelioma. A portion of the tissue of the cheek at the edge of the ulcer had been removed and examined microscopically by a competent pathologist in Brooklyn, and had been pronounced to be surely malignant. Microphotographs of the microscopic sections made by the pathologists had been taken and Dr. Morton exhibited one of them. This showed the characteristic appearances of an epitheliomatous growth; there were epithelial cell-nests and some infiltration of deeper-lying structures by epithelial cells. With regard to the possible specificity of the lesion, Dr. Morton said that much of the suspiciously deceitful character of the lesion which now seemed to point to its possible syphilitic origin was due to the treatment by the X-rays. The hard indurated edge of the ulcer extended in some directions for half an inch away from the ulcerated area before the commencement of the treatment. Considerable experience with X-rays and their effect upon specific ulcerative lesions has been reported from Germany. The X-rays do not act favorably on specific lesions, but on the contrary rather seem to cause them to diffuse. In the present case there has been such an immediate and decided relief of symptoms that the patient is enthusiastic in her hope of ultimate cure. Notwithstanding the deceitful appearances, then, there seems no good reason to think that there has been a mistake in diagnosis; in any case, the ulcerative lesion of long standing has been decidedly helped by the X-rays.

EASTERN MEDICAL SOCIETY OF NEW YORK CITY.

Stated Meeting, Held February 14, 1902.

The President, R. Abrahams, M.D., in the Chair.

Limitation of Obstetric Operations.—Dr. Edward A. Ayers opened a discussion on this subject. He pointed out the importance of careful antepartum examinations; the majority of contracted pelves could thus be detected early before labor sets in, and appropriate preparations and treatment applied. He then discussed the respective merits of Cesarian section and symphysiotomy by stating that the former is more dangerous for the child, while in skilled hands symphysiotomy offers better chances of delivering a living child. Dr. Ayers deplored the unfortunate fact that most of the cases suitable for operation are seen late, when, labor has progressed, and forceps have repeatedly and forcibly been applied in vain; the woman is already exhausted and the exposure by removing her at such a time to a hospital further reduces her vitality. Under such circumstances version or even craniotomy is the only thing left to be done. In cases of early loss of the amniotic fluid, version is dangerous on account of the liability of rupture of the uterus, while forceps in such cases are dangerous for the child. Dr. Ayers then discussed the question as to which operation should be preferred in a private dwelling, Cesarian section or symphysiotomy, enumerating the instruments and preparations necessary for the performance of these operations and emphasizing that the most important requisite for both operations is thorough asepsis. He showed that abdominal section at a patient's home, particularly in a tenement-house, is difficult and dangerous. The technic of his subcutaneous method of symphysiotomy was carefully described in detail. The brilliant results of the Cesarian section at the present time, Dr. Ayers attributes not so much to the improved modern technic, as to the early and timely operation, before labor has set in and reduced the vitality of the woman. Still, symphysiotomy has a mortality of only 2½ to 5 per cent. when done in time and by skilful hands.

Dr. C. A. Von Ramdohr discussed the indications for forceps and stated that the most important requisites for a successful forceps operation are a normal head, a normal presentation, rupture of the membranes and an engaged head in a dilated cervix. If every physician would look out for this condition before applying forceps, he would meet with no untoward complications. Speaking of version, Dr. Von Ramdohr said that a pelvis with conjugate diameter below three inches is a contraindication to a successful version. Outside of this there is no limit to successful version if done patiently and dexterously.

Dr. S. Marx is of the opinion that in a case of labor, the interests of the mother are most important, and all one's energies should be concentrated on one purpose—to injure the mother as little as possible. Viewed from this standpoint, perforators, craniotomes, cranioclasts, etc., are conservative instruments, and not relics of barbarism, as some would lead one to think. With all the progress which has been made in Cesarian section and symphysiotomy there is still a good field for the operations of craniotomy, decapitation, embryotomy, etc. After describing the indications for all these operations, Dr. Marx drew the following deductions and conclusions: (1) A strong plea is made for the early and timely recognition of abnormalities of the pelvis or of the fetus. (2) Such timely recognition gives the very best opportunity for instituting, as nearly as possible, elective means for overcoming practically all such complications, and thereby very frequently obviating the necessity of performing mutilating operations on the fetus which by an early interference might have been prevented. At least it can be said that, having a case well in hand, a non-infected woman, with a healthy child inside of her uterus, can be subjected to almost any form of major operative interference with the prospects of the very best results. (3) A clear recognition of the indications for the use of the destructive instruments is of the greatest importance, since by their early application the very best purpose is served, without doing the badly-maimed or dying fetus the least bit of harm, since in these cases the child's condition must never be seriously taken into consideration.

Dr. Charles Jewett spoke of the indication for Cesarian section, saying that the operation has gained much by modern methods of asepsis. While formerly only a 5-centimeter conjugate diameter of the pelvis was considered an indication for abdominal section, today a woman with a conjugate of 7 centimeters should be subjected to the operation. When the pelvis has a conjugate diameter of about 7 centimeters, Cesarian section comes into competition with symphysiotomy, induction of premature labor, and craniotomy. Of course, craniotomy is indicated when the fetus is dead; it is also indicated when the mother has become exhausted; when the fetus is non-viable or is a monster; when the uterus is infected; but it must not be forgotten that besides the death of the child, craniotomy has also a mortality of the mothers. Induction of premature labor does not offer a very brilliant prognosis as to fetal mortality, but it is much better for the inexperienced operator. Symphysiotomy has, according to Dr. Jewett, been crowded out by the low mortality of Cesarian section, and is only restricted to cases in which very little more space is needed for a successful delivery, particularly in case the mother is exhausted. Cesarian section at present has a mortality of hardly more than ¾ per cent. in selected cases, under the best condition and surroundings. It is best performed during the second stage of labor, provided no infection has occurred. Hysterectomy is indicated when there is a probable infection of the uterus; when the mother is exhausted, hysterectomy is a better operation than simple Cesarian section; also in cases of cancer of cervix, in myomatous uteri, in syphilis of the mother, and according to some authorities in criminal tendencies of the parents, and in ostreomalacia.

Dr. H. J. Garrigues stated that indications vary with results obtained and with the personal aptitudes of the operator. One operator may be more successful with the application of the forceps, the other with version, etc. The physical condition of the patient has a great influence, particularly as to infection. Nobody will perform Cesarian section on a woman with an infected uterus. The reports of the low mortality of Cesarian section are misleading; in selected cases, the operation has a mortality of 7 per cent.; taking all cases, at least 19 per cent. Symphysiotomy ought to be more often performed, particularly in cases in which infection has occurred before the operation. Speaking of forceps and version, Dr. Garrigues called attention to the danger of the operation in cases of moderate contraction of the pelvis with a conjugate below four inches. Dr. Garrigues is of the opinion that craniotomy ought not to be performed on a living child.

Dr. B. Gordon entered a protest against meddlesome midwifery, stating that the vast majority of women have normal pelves; and when the pelvis is slightly contracted, Nature usually comes to the poor woman's assistance by producing a small child. Dr. Gordon states that in cases in which the existence of a narrow pelvis is discovered early in pregnancy, it is his practice to order a reduction of the carbohydrate diet of the woman, keeping her mostly on albuminous food and thereby reducing the size of the child. He has been very successful with this mode of treatment.

Dr. Joseph Barsky stated that, speaking as a general practitioner who practices in the tenement district, he cannot find any field for symphysiotomy among poor patients, because this operation requires careful preparation and nursing, which poor women cannot obtain. A poor woman must be able to perform hard labor soon after confinement and symphysiotomy nearly always leaves the woman in a condition in which she is unable to do even housework for weeks after her delivery. The only procedures he has found applicable in his extensive obstetric practice are version, forceps and craniotomy. In cases in which the pelvis is slightly more than three inches in its conjugate diameter, version may be of avail or even forceps if the child is not too large, particularly when the sagittal suture is found on manual examination to be in a transverse direction, inclining toward the promontory. Version is sometimes very difficult when the child has broad shoulders and especially when the head is large in proportion to the pelvis. In these latter cases Dr. Barsky has sometimes found it necessary to perform craniotomy on the aftercoming head. In cases in which the conjugate diameter measures less than three inches the only resort left is craniotomy. If the parents are very anxious for a living child, of course Cesarian section finds its best place in these cases. Dr. Barsky took exception to Dr. Von Ramdohr's statement that a forceps operation can only be successful when the head is engaged. He has repeatedly delivered women of living children when the head was not engaged at all. And he emphasized the fact that the forceps have absolute indications even when there is no engagement of the head, particularly if the woman be exhausted, in tonic contraction of the uterus, version being dangerous to the mother under such circumstances.

Dr. E. K. Browd stated that from 2,000 labor cases which he has attended during the last sixteen years, the most important lesson he has learned is not to interfere until it is absolutely necessary.

The discussion was continued by Dr. J. Rosenberg, Dr. Zwiesohn, and others.

BOOKS RECEIVED.

The Medical News *acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the* Medical News *will shortly appear.*

Syphilis. A Symposium. 12mo., 121 pages. E. B. Treat & Co., New York.

Psychology, Normal and Morbid. By Dr. Charles A. Mercier. 8vo., 518 pages. The MacMillan Co., New York.

Die Berufskrankheiten des Ohres und der oberen Luftwege. Dr. F. Röpke. 8vo., 148 pages. J. F. Bergmann, Wiesbaden. Stechert, New York.

Ueber die Aetiologie des Carcinoms. By Dr. Gustav Fütterer. 8vo., 124 pages. Illustrated. J. F. Bergmann, Wiesbaden; Stechert, New York.

Muskelfunction und Bewusstsein. By Dr. E. Storch. 8vo., 86 pages. Illustrated. J. F. Bergmann, Wiesbaden; Stechert, New York.

Die Grosshirnrinde als Organ der Seele. By Dr. A. Adamkiewicz. 8vo., 80 pages. Illustrated. J. F. Bergmann, Wiesbaden; Stechert, New York.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. 80. NEW YORK, SATURDAY, APRIL 12, 1902. NO. 15.

ORIGINAL ARTICLES.

ON AMEBIC ABSCESS OF THE LIVER.[1]

BY WILLIAM OSLER, M.D.,
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By far the most frequent form of abscess of the liver met with in this locality is that which is secondary to the amebic dysentery of which it is by far the most frequent and serious complication. The relative frequency may be judged from the fact that of some 93 cases of amebic dysentery which have been admitted to the wards, abscess of the liver occurred in 23 as a complication. Naturally this very high percentage is owing to the fact that only the more serious cases are admitted, and a considerable number of these, of course, come into the hospital for the hepatic symptoms and not for the dysentery.

Within the past three or four months we have had a rather unusual series of five (possibly six) cases, illustrating many interesting points in the clinical history of abscess of the liver. You have had many opportunities of studying these cases, and I purpose this morning to review their histories in order that I may impress upon you the chief features.

Case I.—Clinical Summary. No history of dysentery. Illness of four weeks' duration. Pain in the right side. Swelling over the sixth and seventh ribs. No enlargement of the liver. Remarkable persistent cyanosis. Operation. Opening and draining of an abscess of the liver. Recovery.

The patient, Thos. E., aged thirty-two years, admitted Oct. 18, 1901, had been a healthy man, with a good history. He had not had dysentery. He entered the hospital complaining of pain in the right side below the ribs. His illness had begun four weeks before admission with a chill, followed four days later by pain in the right side, not severe enough to make him take to bed. This pain had gradually increased, and was most intense beneath the lower ribs on the right side; it was especially severe after eating and frequently radiated to the shoulder. Shortly after the onset of his illness he began to notice that he passed mucus in the stools, but there was no blood, and he had only one or two movements in the twenty-four hours. He had several slight night-sweats; no chills, no jaundice. His appetite and digestion were good, and the patient felt well except for the pain and a sense of weakness. One remarkable feature in his case was the diffuse cyanosis, a general blueness of his face and hands which he had noted about two weeks after the onset of his illness. On admission this lividity was very striking. On the right side over the sixth and seventh ribs there was a swelling between the parasternal and midaxillary lines. There was no redness and no heat over it. There was tenderness on light palpation, and on deep palpation it gave a boggy sensation. The right costal margin was a little more prominent than the left, and the right rectus was held a little tense. The liver flatness began at the fifth rib and extended two centimeters below the costal border. The edge could not be felt. The spleen was not palpable. Examination of the other organs was negative. The stools showed no amebæ. The leucocytes were 6,825 per cubic millimeter. An extraordinary feature was the general diffuse cyanosis. He constantly looked as if he had just come out of a cold tub. The hand forcibly pressed upon the skin of the chest or back left an area of anemia which was very slowly obliterated. His temperature was normal. He was under observation until November 11th, and, with the exception of the swelling over the sixth and seventh ribs and a slight pain, there were no symptoms. The liver was not enlarged and there was no tenderness on deep pressure over the liver, either in the axillary region or at the tip of the tenth rib. The intercostal spaces on this side were not obliterated. The swelling persisted, but did not increase. It was particularly to be noted that his temperature was normal; he had no chills; there was no leucocytosis. On the night of November 6th he had a heavy sweat. I discussed the case frequently with Dr. Halsted, and I must say we could not arrive at a positive diagnosis. I inclined to the view that he had necrosis of the ribs from some cause, and, though the diagnosis of abscess of the liver was suggested, the negative character

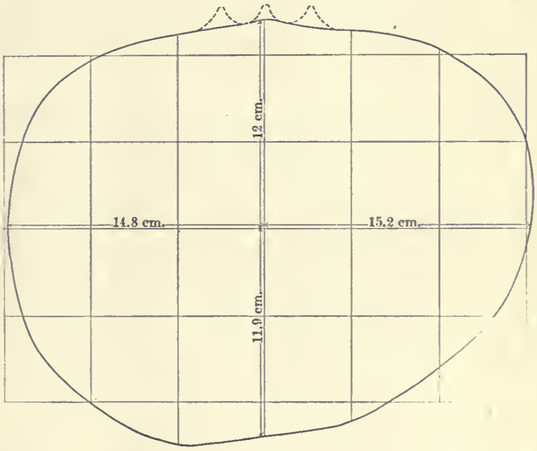

Chart 1. Cyrtometric tracing in Case III., showing the enlargement of the right half of the thorax.

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[1] A Clinical Lecture delivered at the Johns Hopkins Hospital, Feb. 15, 1902.

of the symptoms rather pointed against it. The leucocytosis on the 7th rose to 11,000, and he was transferred to the surgical side.

On the 11th Dr. Halsted operated, and found that there was only an area of infiltrated tissue over the region of the swelling; there was no necrosis of the ribs, but there was a remarkable tag of adhesions passing between the surface of the liver and the chest-wall, corresponding to the area of swelling over the ribs. At operation the surface of the liver looked quite normal, but as it felt a little boggy in places it was aspirated and pus was found. The abscess cavity was then very freely opened and drained. Numerous active amebæ were found in the pus. The patient is now convalescent and will get perfectly well.

Case II.—Clinical Summary. Dyspepsia for two years. Loss of weight. For three months pain in the right side at intervals. Attacks of vomiting. Slight jaundice. Progressive weakness. No chills. No leucocytosis. Increase in the size of the liver. Diagnosis of cancer of the liver. Death. Autopsy, abscess of the right lobe of the liver.

Amelia B., aged sixty-four years, admitted November 11th, complaining of pain in the right side. For many years she had had dyspepsia and had been very nervous. For two years she had been losing in weight. Her present illness began thirteen weeks before admission, with a sudden severe pain in the right side, which lasted for two days and then subsided; she has had it at intervals ever since, particularly with nocturnal exacerbations; it is usually in the lower part of the right side and radiates to the front of the abdomen, never to the shoulder. She has had frequent attacks of vomiting, particularly at night when the pain is worse. The bowels have been constipated, except at the onset of the illness, when she passed a little blood in the stools. She has grown progressively weaker and has lost in weight. During the past few weeks she has become slightly jaundiced. The abdomen was full and large; there was tenderness below the right costal border; no special tenderness over the gall-bladder, but deep under the costal margin there was a firm hard mass to be felt, which descended with inspiration. The edge of the liver could be felt all along the costal border. She had no fever and the leucocyte-count was only 10,000. The stools were clay-colored. They were not examined at the time for amebæ, as there was no suspicion of abscess. She remained in the hospital two weeks and improved very much; she was afebrile throughout and was discharged very much better on November 26th.

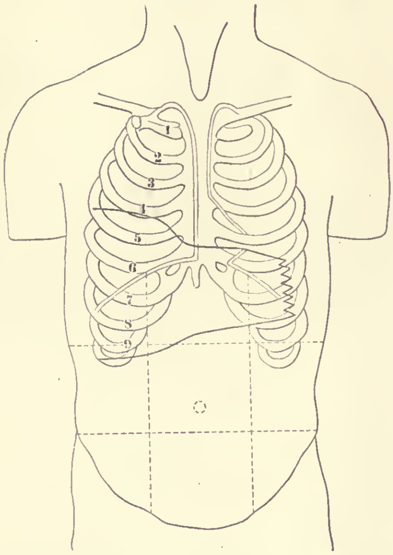

Chart 2. Showing the upward enlargement of right lobe in Case III.

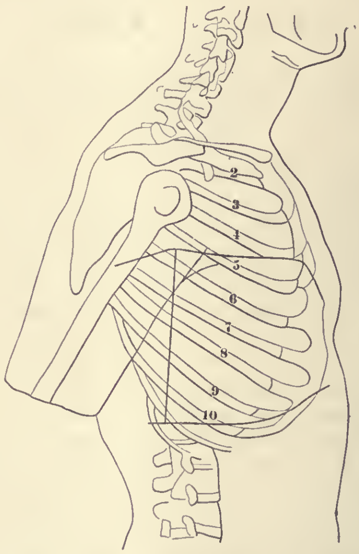

Chart 3. Showing the high limit of liver dulness in Case III.

She returned on December 30th, complaining of a great increase in the pain in the side, particularly on movement. She had a great deal of nausea, vomiting and insomnia. She was sallow, but not jaundiced. The edge of the liver could be felt three finger-breadths below the costal border, and there was irregularity of the edge. During the month she was under observation she had slight fever, ranging occasionally to 101° F.; usually it was not above 99° F. She had no chills, no diarrhea; the stools were clay-colored; no bloody mucus. There was a trace of bile in the urine. The leucocytes were only 8,800. The liver gradually increased in size. The abdomen was difficult to palpate, as it was full and large, but a nodular mass was made out below the right costal border. The liver flatness began at the fifth interspace, and gradually, as the liver increased, extended almost to the navel. The pain in this case was peculiar. Any movement caused it, and the patient suffered a great deal at night. She gradually grew weaker and died on February 2d.

The autopsy showed a large, solitary abscess of the right lobe of the liver. There was no ulceration in the intestines. At the time of the postmortem, amebæ were not found in the superficial examination of the pus, but later they were seen in large numbers in a section of the wall of the liver abscess. We had no suspicion whatever in this case of the existence of abscess of the liver. I thought that possibly it was a case of gallstones with cancer, as the pain came on so suddenly, but, while no definite diagnosis was reached, strong suspicion was entertained that it was cancer of the liver. The organ increased rapidly in size. There were no chills, no sweats and no leucocytosis, and the pain was not greater than one sees sometimes in rapidly-growing carcinoma.

Case III.—Clinical Summary. Dysentery five months before admission. Gradual improvement. Recurrence. No chills. Progressive weakness. Amebæ found in the stools. Characteristic signs of abscess of the liver. Litten's sign in the fifth interspace. Operation refused. Discharge. Rupture of abscess into lung. Death.

Joseph S., aged twenty-nine years, admitted December 9, 1901, complaining of trouble in the abdomen. He had been a healthy man, an Austrian, who had lived in this country for seven years. He had been a sailor and had been on repeated cruises. He had not been out of Maryland for four years. Five months ago he had had a severe attack of dysentery which was very severe for three or four days and had continued ever since. He was treated in Brooklyn, N. Y., for typhomalaria, and subsequently, by another doctor, for spinal disease. He had been getting progressively weaker. His dysentery improved and for some time he was constipated. Two weeks ago he began again to have diarrhea and passed some mucus. He had had no chills.

On admission the patient looked ill and pale. His temperature was normal, but rose to 101.5° F. in the evening. The thorax was asymmetrical, bulging on the lower right side, as shown very well in the accompanying cyrtometric tracing (Chart I.). The liver was enlarged and there was a marked fulness in the epigastric and right hypochondriac regions. There was nowhere any tenderness. The liver could be seen descending with inspiration. Charts II. and III. (outlined by Dr. McCrae) show very well the interesting increase in the area of liver flatness. The measurements were 17 cm. in the nipple line, 16½ cm. in the parasternal line, 16 cm. in the midaxillary line. The left limit of liver flatness was somewhat doubtful. One point of very great interest was a very definite Litten's diaphragm phenomenon in the fifth interspace. Never do I remember having seen the diaphragm phenomenon so high, and it was almost evident from it alone that the bulging and fulness were not due to empyema. In the mucus of the stoft stools amebæ coli were fund.

On the following day the patient was aspirated and a creamy, glutinous pus obtained, chiefly made up of granular débris and a few cells looking not unlike liver cells. No amebæ were found in it. In this case too the leucocytes on the 9th were only 9,000, and on the 10th practically the same, red blood corpuscles 4,500,000, hemoglobin 51. He had not a particularly septic look, nor was he jaundiced. The patient was urged to have an operation, but he refused and went home. There was nothing of special moment in the urine. His temperature ranged from 97.5 to 101.5° F. At his home the abscess ruptured into the lung and he spat up a large quantity of pus. He grew progressively weaker and died about February 5th.

In this case the history of dysentery and the patient's condition on inspection were almost sufficient in themselves to make the diagnosis. The high situation of the diaphragm phenomenon was a most interesting feature.

Case IV.—Clinical Summary. Imperfect history. Marked cough. Pain in the right side. No sweats, irregular fever. Leucocytosis. Diagnosis of empyema. Operation. Multiple abscesses of the liver. Drainage of a large one. Death. Autopsy.

Jos. K., aged forty years, admitted December 4, 1901, complaining of pain in the right side and fever. He was a Pole, did not speak English, and the history was difficult to obtain.

His present illness had begun two weeks before admission with a severe pain in the right side, which was exaggerated as the patient drew a deep breath. He had had no definite chills, but did have chilly sensations. He had had marked cough from the onset and spat up blood once during the first week. He had had no sweats. The bowels had been regular.

On admission the patient looked ill, had a sallow, gray, septic appearance, and was somewhat cyanosed. Respiration was increased. He had a full, emphysematous chest. On the right side there was flatness to the fourth rib with distant breath sounds and diminished vocal fremitus. When sitting up the flatness reached to the lower border of the third rib. Over the dull area there were diminished vocal fremitus and distant breath sounds. The heart impulse could not be localized. The abdomen was full, particularly in the epigastric region. The edge of the liver could be felt 4.5 cm. below the costal border. There was a leucocytosis of 22,800. The temperature range for the first few days was between 100 and 104.5° F. A needle was inserted in the sixth left interspace in the mid-axillary line and pus was obtained. The patient was transferred at once to the surgical side.

The eighth rib was resected and when the pleural cavity was opened it was found normal. The wound in the pleura was then closed, and the following day a large abscess of the liver was evacuated through an incision in the diaphragm. Amebæ in abundance were found in the pus. The patient died on the 9th.

The autopsy showed multiple abscesses of the liver and small ulcers in the colon. The case was a hopeless one for surgery. There were numerous large abscesses, and it would not have been possible to reach them by any surgical procedure.

Case V.—Clinical Summary. Five months before admission an attack of dysentery. Subsequently an illness supposed to be typhoid fever with irregular temperature and night sweats. Sudden attack of coughing in which he spat up large quantities of pus of a reddish-brown color. Signs of a hepato-pulmonary abscess. Amebæ in the pus. Patient recovering.

J. H. B., of Virginia, colored, aged forty-six years, admitted January 23, 1902, complaining of weakness. During last September and October he had an attack which was supposed to be typhoid fever. He had diarrhea for three or four days with mucus and blood in the stools, which were from three to seven in the day. A number of people in his neighborhood had attacks of the same character. On September 18 he had an attack of cramps in the stomach, headache, fever and pain in the right side. After this he was ill for three weeks with what the doctor called typhoid fever. Then he had irregular fever for several weeks with severe night-sweats. On November 9, during the night, he had an attack of coughing of great severity, during which he spat up a large quantity of blood and pus. The attacks of coughing have persisted ever since and every morning he coughs up reddish-brown mucus. He has had no pain since November 9, but has been growing weaker.

On admission he was looking fairly robust; there was a bulging in the right lower thorax, especially behind and in the flanks, and there was a little fulness at the right costal border. There was flatness in the right side beginning at the fourth rib and extending into the axilla and as high behind as the lower half of the scapula. The breath sounds were suppressed. Just beyond the posterior axillary line there was a region in which large gurgling râles were heard when he coughed and there was a friction sound in the right axilla. The edge of the liver was not palpable. There was no blood and no mucus in the stools and nothing was found on passing the rectal tube. He had a leucocytosis of nearly 15,000 and a decided anemia, the red blood corpuscles numbering only a little over 2,500,000.

When I saw this patient a few days after his admission I was at once struck by the character of the sputum, which looked very much like that which we have learned to recognize as almost characteristic of liver abscess discharging through the lung. No amebæ, however, had been found in it. On the 24th, Dr. Warfield inserted a needle deep between the eighth and ninth ribs in the posterior axillary lines and drew off a brownish-red, very grumous-looking pus which contained motile amebæ.

As we had several cases in which the abscess had been discharged through the lung and the patients had made a good recovery, we thought it best to wait a few weeks before operating. He is now very much better. His expectoration has diminished, his cough is not nearly so severe, his temperature is normal, and he is gaining in weight. The right side of the chest has become flattened, there is less expansion and the intercostal spaces are very much narrowed. There is flatness to the fourth rib. There is everywhere feeble breathing over the dull region, and on coughing one can hear medium-sized râles.

I may briefly refer to a case at present in the private ward, which I have been seeing at intervals with Dr. Thayer—a man from Norfolk, who has had recurring attacks of amebic dysentery for the past six or eight months. He came into the hospital in a condition of great emaciation, with very frequent evacuations, and for some weeks we were very doubtful about his recovery. With careful irrigations and dieting he began to improve, and early in February the dysentery seemed to be cured entirely. He improved in color and altogether has done remarkably well. For between two and three weeks he has had persistent pain in the right side, far back under the edge of the ribs, and the liver has been increasing in size, so that it is now three fingerbreadths below the costal margin. He has a little fever every evening, up to 100° F., a slight leucocytosis and every night a sweat, but he is gaining in weight, and during the past week he gained some two or three pounds. The question is whether he, too, has not an abscess of the liver.[1]

Several points are illustrated in these five cases.

Latency.—In Case I. the abscess was not large and the features of the case were singularly negative, there being absence of fever, of chills, of sweats and of leucocytosis, until just before the operation. There were, however, two features worthy of special comment, viz., the remarkable diffuse cyanosis, for which I cannot offer any satisfactory explanation, and the localized swelling above the right costal border, which is sometimes seen in abscess of the liver which approaches the surface and is preparing to perforate. At operation, however, this was found to be associated with a group of adhesions between the liver and the costal margin, but there was no necrosis and no sign of the abscesses actually pointing in this situation.

The Liability to Error in Diagnosis.—I must say Case II. was what Niemeyer used to call "a mortifying postmortem disclosure." A few days after her admission the patient was seen with a view to the possibility of surgical interference, but the symptoms seemed to point so strongly to malignant disease that we did not think it worth while to put her to the trouble of an exploratory operation. As the specimen showed, operation might have done good, as the abscess could have been easily evacuated. Such a case makes one strongly in favor of the exploratory incision for diagnostic purposes.

Case IV. illustrates one of the commonest errors in diagnosis, the mistaking of a large abscess projecting upward into the lung for empyema; nor is the diagnosis always cleared up by the exploratory needle. Large abscesses toward the surface of the right lobe pass high into the pleura in the direction of least resistance and the features may simulate closely those of a right-sided exudate.

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[1] After the delivery of the lecture this patient's liver increased in size, the bulging in the right flank became more marked, and on March 8th Dr. Finney operated and evacuated an enormous abscess. A point of very great interest in this case is the fact that there was progressive increase in weight and the general condition was good. He had been sitting up and looked well.

Case V. as seen to-day would be readily taken for a case of empyema which had perforated into the lung and was healing, but the character of the attack following dysentery, the sudden expectoration of the anchovy-sauce-like pus and the presence of amebæ were sufficient to settle the diagnosis.

Leucocytosis in Abscess of the Liver.—A point of very considerable interest is the question of leucocytosis in amebic abcess of the liver. From the history of these cases and of others, too, some of the statements on this point need revision. In Case I., on admission, the leucocytes were only 6,000 per cubic millimeter and only once rose to 11,000. In Case II. the leucocytes were only between 8,000 and 10,000 per cubic millimeter. In Case III. they were only 9,000 per cubic millimeter. In Case IV. there was a leucocytosis of 22,000, and in Case V. a leucocytosis of 15,000. Three of the cases, as you see, had practically no leucocytosis. The strong statements as to the invariable presence of leucocytosis in abscess of the liver—made even, I am sorry to say, in the recent fourth edition of a text-book of medicine in which I am interested—require to be modified.

Lastly, amebic abscess of the liver is not always associated with existing ulceration in the intestines, as is shown by the postmortem in Case II. The patient may have had dysentery months before and the ulcers may have healed competely.

SPA TREATMENT OF GOUT.

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The general principles involved in the treatment of gout are three, viz.: (1) The treatment of an acute paroxysm, with speedy relief of pain. (2) The treatment of a subacute or chronic condition, with prevention of an acute attack, or of that condition known as goutiness, in which various irregular manifestations may appear from time to time, but in which an acute paroxysm rarely, if ever, occurs. (3) The treatment of chronically affected joints, with removal of the uratic deposits and deformities, and restoration of their functions.

In consideration of the spa treatment of gout, with which alone this paper has to do, the first of these principles may be entirely omitted from the discussion, as spa treatment of whatever form is contraindicated in an acute attack.

In the treatment of subacute or chronic gout, far more, perhaps, than in any other form, is shown the influence of the gouty predisposition either inherited or acquired. While it is impossible by any form of treatment to set aside this tendency to the occurrence of gout under circumstances favorable to its development, we can do much toward lessening the liability to its development, and when developed we can by judicious care almost always ameliorate the severity and frequency of its manifestations, and in many instances entirely get rid of the symptoms of the disease. How is this to be done? And upon what theory as to the etiology of the disease do we base our plan of therapeutic action?

While many theories have been advanced from time to time, as to the cause of this affection, none of them have stood the test of thorough investigation, and our treatment of this condition is now, as it has been since the days of Sydenham, purely empirical. We have learned by experience that certain forms of treatment are better than others, and that by adopting certain measures we have obtained desired results, but why we get them and in what manner our treatment acts we are in no wise able positively to say.

The uric-acid theory of gout, as set forth by Garrod in 1847, and modified by him at various times since, is, perhaps, the most popular and generally-accepted theory of to-day, especially among practitioners of medicine in this country. But the observations of Garrod upon which he based his contentions have not been confirmed by more recent investigators, and this theory, like all the others, is not borne out by facts.

Garrod contends as follows: (1) Uric acid is normally formed in the kidneys, and the onset of gout depends upon the absorption and retention of uric acid in the blood, due to partial failure in the uric acid excretory function of these organs. (2) The separation of the urates from the blood and deposition in the tissues occur when the blood is no longer able to dissolve the uric acid (*a*) because the uric acid is in excess, and (*b*) because the alkalescence of the blood is diminished.

With the exception of some experiments upon serpents, made by Zalensky, which, to my mind, are by no means conclusive, there are none that furnish proof that uric acid is formed in the kidneys, nor is there any evidence that the onset of gout is due to kidney failure. Ebstein says that while in primary articular gout the kidneys are implicated only after a longer or a shorter period, there are many cases in which the kidneys do not become implicated up to the death of the patient, and he refers to a patient of Bramson's, a laborer who had suffered from gout for twenty years, who on autopsy showed absolutely normal kidneys, though the gouty deposit was very extensive in the joints and tendons. Senator also holds the same views as Ebstein.

As to the excess of uric acid in the blood in gout, Magnus-Levy in ten observations in gout found during and between the seizures from 3 to 6 milligrams of uric acid in 100 c.c. of blood, about the normal amount, and no excess of uric acid during the gouty attack.

As to the alkalescence of the blood, Fraenkel and Benda examined three febrile cases of gout, and got normal values for the alkalescence of the blood. Magnus-Levy examined sixteen cases of gout during and between the seizures, and found no diminution in the alkalescence of the blood.

Garrod claims that the uric-acid output in gout is diminished during the seizures. This contention is denied by Pfeffer, His, Magnus-Levy, and Futcher. These observers, by reliable methods, all found an excess of uric-acid excretion during the seizure. My own observations confirm those of the latter. In a case of gout in which I made a daily estimate of the uric-acid output by Gowland-Hopkins' method, for a period of fourteen days, during which time there was an acute exacerbation, I found the daily average output to be as follows: Before, 442 grains; during, 659 grains; after, 396 grains.

Haig, who is also an enthusiastic advocate of the uric-acid theory of gout, believes in the extreme toxicity of uric acid, formed in or introduced into the system. The following observations which I have made during the past winter in the laboratory of Dr. C. A. Herter, in New York, have made me very skeptical on this point, and while they are not conclusive they are extremely suggestive. In two cases of chronic nephritis, 3 grams of uric acid were given by the mouth in twenty-four hours for three days in succession. A decided increase was found in the urine during the time, but there was no systemic disturbance. In one case of chronic nephritis, 3 grams were given in twenty-four hours for three days in succession and on the fourth day six grams were given, without producing any systemic disturbance. In four cases of chronic gout, a diet of shad roe was given for five days, which caused a decided increase in the excretion of uric acid in the urine, but no disturbance of the health. In animals I have also made some observations which tend to corroborate this view. In two rabbits, two successive intravenous injections of 1 gram each of uric acid were made without systemic disturbance, though a large part of the acid was recovered from the urine. In two dogs, two successive intravenous injections of 2 grams each of uric acid were not followed by any disturbance, while the urine showed a large increase. Taking into consideration the foregoing, together with the fact that many other diseases than gout are always accompanied by an excessive output of uric acid, I feel that at least we must look for some other substance than uric acid as the cause of this disease. It is possible that we may yet find some substance which may be considered the *materies morbi* of this affection, and recent observations point to the purin bases like adenin, which are intermediate between nucleins and uric acid, as likely to furnish us with the toxic principle.

At present, however, we must content ourselves with the fact that we have to do with faulty metabolism, the cause of which we can only surmise, and base our treatment upon those general principles of hygiene, which experience has taught us are best adapted to the relief of this condition. For this reason the spa treatment, which is purely a hygienic one, based and carried out on thoroughly scientific principles, will seem to be the proper method of procedure in these cases.

In ordering the spa treatment for our gouty patients, we must bear in mind the fact that it is a complex treatment, made up of many factors, each of which has a decided bearing upon the successful issue of the whole. For purposes of discussion it will be advantageous to consider them separately under the various heads.

Hydrotherapy.—The bathing procedure itself, as regards temperature, duration and method of application of the waters, is, perhaps, one of the most important of these elements, and should be thoroughly understood. The effects obtained by bathing are due to the influence upon the organism of thermal stimuli. In order to understand properly the bathing process, let us consider for a moment how the system is affected by the thermal stimuli.

The body temperature is maintained at a nearly constant standard by the generation in the interior of the body of animal heat. This production of heat is in proportion to the activity of the internal changes. These changes are especially indicated by the absorption of oxygen and the exhalation of carbonic acid. If the body be immersed in a cold bath there is an abstraction of heat at the surface, with a proportionate increase of heat production in the interior to maintain the body standard. After the discontinuance of an abstraction of heat, not of excessive intensity or duration, during which the body temperature rose a little, a period follows when the temperature of the body becomes lower than it was before the bath (primary after-effect). To the stage of cooling succeeds a slight compensatory rise of the heat of the body (secondary after-effect). The primary after-effect is chiefly due to the relaxation of the capillaries and a cooling down of the blood. which thus flows rapidly through the cooled periphery. It is also in part due to a decrease in heat production, which thus compensates for the great increase in heat production which took place during the bath.

Immersion of the body in hot water increases the body temperature by the additional heat brought to the surface, and by checking the normal radiation of heat.

Baths of from 83.2° to 95° F. have no influence upon the healthy individual, either in the production or abstraction of heat, and they are called thermally-indifferent baths. The thermally-indifferent point will vary with different individuals and in the same individual under different conditions, and will depend upon his sensibility or susceptibility to impressions of heat and cold.

A thermally-indifferent water applied to the skin by means of a spray or douche produces a dilatation of the capillaries through stimulation of the sensory and vasomotor nerves, and lowers the body temperature by allowing a greater amount of blood to flow through the colder periphery of the body. This loss of heat is compensated for by increased heat production. In such a stimulating bath there is a direct increase in the amount of oxygen consumed and carbonic acid exhaled. In like manner, immersion in a hot bath for a short duration of time lowers the body temperature.

These various effects of temperature presuppose that the body at the time of the bath is in a normal condition, and that the air of the bathroom is at a temperature of from 60° to 70° F.

If the bath be taken when the temperature of the surface of the body is warmed, either by exercise or by artificial means, the cutaneous circulation being thereby active and sensitive to impression, reaction will be quicker and more prompt, whereas, if the skin be cold and inactive, reaction will be delayed or may be entirely lacking.

It will thus be seen that in order to obtain the best results from the bath the condition of the circulation and the surface temperature should be taken into account in giving the bath.

It will be seen by the foregoing, that as the thermally-indifferent point varies with different individuals, and in the same individual under different conditions, the temperature of the cold or of the hot bath is purely relative, and in fixing the temperature of the bath it must be done solely in reference to the condition of the individual at the time of taking it and his sensitiveness to thermal impressions, and cannot be regulated by the thermometer. The intensity of the thermal stimuli will depend, then, not upon the temperature of the water used, but on the variation in temperature between the surface heat and the water used.

Immediately following the bath the skin will be in a more or less sensitive condition from the effect of the thermal stimuli that have been employed. The moisture upon the skin rapidly evaporates and a distinct abstraction of heat will take place as a consequence of these conditions. In some instances when abstraction of heat is the end desired, this fact may be taken advantage of, but, on the other hand, when we wish to have a tonic or sedative effect of the bath and desire to obtain prompt reaction to favor that end, the patient must be protected by hot sheets or friction, or both, to reduce the heat radiation to a minimum, otherwise the results of the bath will be negatived and a depression of the vital forces will be an invariable consequence.

The bath procedure, then, will consist really of three stages. The preparation stage, in which the body surface is put in a receptive condition. This may be accomplished by active exercise, to the degree of stimulating the cutaneous circulation and getting the body in a gentle glow. A bath following prolonged or severe exercise to the point of getting the body overheated is always fraught with great danger and must be sedulously avoided. Warming the skin with hot blankets or the hot-air bath is another means of preparation; or, by the use of the douche bath, the skin may be most conveniently prepared by beginning the process with warm water, continuing it until the skin is in proper reactive condition, then using this temperature as a standard from which the water of the bath proper may be varied as desired.

The treatment stage, the second step in the bathing procedure, consists in the application of the thermal stimuli in such order and intensity as to produce precise results, as regards heat production and abstraction and the avoidance of subsequent reaction, which would interfere with or nullify the effects desired.

The selection of a method for producing the thermal stimuli is purely a matter of choice, and will depend upon the condition of the patient, his vital energy and reactive power. The degree of temperature used, whether hot or cold, is selected with relation to the temperature of the preparation stage and is based entirely upon the sensations of the patient, the intensity of the stimulus depending upon degree of variation.

In no therapeutic procedure is it so difficult to judge of the reactive power of a patient as in that of the bath. Individuals who seem robust and in perfect physical condition may have poor reaction to thermal stimuli, and in others who are delicate, sensitive, and apparently of deficient vital energy, the reaction to thermal stimuli will be prompt and profound.

In the reaction stage, the third step in the bathing process, our object is to retain or to intensify the effect of the thermal stimuli upon the nerves and circulation that has been produced by the bath, and thus to insure the precise result that has been the object of the treatment.

After the bath the patient should be immediately enveloped in a hot sheet or bath-robe, and should stand upon a warm woolen blanket. The drying can be done by friction outside of the covering. As soon as the body is dry, the damp sheet is removed and a warm one substituted. The patient is then put in bed, the feet wrapped in warm towels, and the body lightly covered, in which condition he rests for a varying period. From time to time the towels about the feet are changed if need be, to insure their warmth, and if the face be flushed a cold compress may be laid upon the forehead.

The form of bath that is generally used in Richfield for gout is the immersion or tub-bath. As the primary object is to increase the activity of the skin and stimulate the circulation, a hot bath is usually given varying in temperature from 98° to 102° F. and in duration from eight to twelve minutes. From the foregoing, it will be seen that a bath of this kind will be highly stimulating, and on account of its short duration does not tend to depress the patient by abstracting heat and lowering the vital energy.

In addition to the therapeutic effect of the bath *per se*, there is the influence of the chemical ingredients contained in the waters.

The waters of Richfield hold in solution in small amounts the sulphates of sodium, potassium, magnesium, and calcium, but are exceedingly rich in sulphureted hydrogen gas, both in solution and free, and I am inclined to believe that their therapeutic value is due principally to the latter. There is no doubt that the chemical constituents of the waters enhance to a great degree the action of the bath, and this is doubtless due to their decidedly stimulating effect upon the glands generally, and especially upon the liver, kidneys, and skin. This effect of the mineral ingredients is shown very markedly in the general systemic disturbance that invariably occurs during the course of treatment by the baths.

After from four to six baths there is always a decided reaction, which manifests itself by a definite train of clinical phenomena. There are headache, loss of appetite, furred tongue, deranged bowels, and a feeling of lassitude and discomfort. If at this time the baths be discontinued for two or three days, these symptoms will disappear, and it is unusual for them to recur during the course of treatment.

The baths of Richfield are not contraindicated by diseases of the kidneys or heart; on the contrary, they have a decidedly beneficial effect in these conditions, but of course unusual care must be exercised in adapting them to the needs of the individual.

The internal use of water is always of great value to the gouty, and those waters which can be taken in large quantities are to my mind of the greatest benefit.

The objection to taking the waters containing the sodium salts by gouty individuals, because of their tendency to render the deposits of urate of sodium less soluable, does not seem to me to be well founded. The effect of the salts held in solution in mineral waters is probably not a direct one upon the uratic deposits, but a secondary one in their effect upon general metabolism through their action in increasing the number of white blood-corpuscles.

His, in some experiments upon animals, found that by injection of sodium urate or biurate into the joints he produced inflammation with necrosis. Resolution was rapid and considerable amounts of the uric acid were absorbed. The uric acid was taken away by the phagocytes. Uni- and polyneuclear leucocytes and the giant cells were concerned in the process.

Diet.—In no phase of the treatment of gout is there so great a diversity of opinion as in the matter of diet. I have frequently had patients say, "If I abstained from all the different foods that have been advised, I would have nothing left to eat." Those who believe in the toxic effect of uric acid in the organism withold nitrogenous foods almost altogether, because by their use a larger amount of uric acid is introduced into the body. Red meats are especially proscribed, and some go even so far as to withhold all proteid-holding foods, such as eggs, milk, and certain of the vegetables.

My observations in the use of nuclein-holding foods, such as shad roe, which produce in the body an excesive amount of uric acid, to which I have already referred, would show that we are not justified in believing that uric-acid-producing foods have any deleterious effect upon the gouty subject. On the other hand, there is no class of foodstuff which gives so great an amount of energy as animal food, and which in the majority of gouty people is so easily digested. As these cases are, as a rule, lowered in tone and vital force, and almost invariably anemic, it would seem that these foods, above all others, are best, and the result of my clinical experience bears out the truth of this fact, as I invariably prescribe meat freely in the diet. The carbohydrates, too, are supposed to have some ulterior effect upon the gouty individual, and are usually interdicted.

To determine what effect, if any, a diet consisting largely of carbohydrates would have upon the gouty subject, I gave for fourteen consecutive days an average daily amount of one and a half quarts of simple syrup, made from cane-sugar, to four gouty patients, giving as high as two quarts a day in some instances. The effect upon the gout was *nil.* There was no gastric disturbance induced, and the patients all gained in weight, and looked and felt better. The only other effect noticeable was a repugnance to fats, which the diet seemed to produce. I would withhold carbohydrates only in those cases in which obesity is a prominent symptom, unless they should be contraindicated for some individual reason. Fats do not seem to have any especial influence in these patients, but may be used with good effect, particularly in those individuals in whom we reduce the carbohydrates to a minimum.

Some quite elaborate experiments have been made to show the influence of the various vegetable salts in rendering soluble the sodium urate in the blood of gouty subjects, but, I must confess, they do not impress me as having any great practical value. A mixed general diet, which contains a fair proportion of vegetable food, will, on the whole, be found to be the most rational and satisfactory diet in these cases. The choice of vegetables will depend upon the digestive capacity of the individual. The diet in gout, then, must be adapted to each particular case, having in mind the general principle that it is to be simple, ample, wholesome, and withal nourishing. Alcohol, when taken in excess, is decidedly pernicious, and even in small amounts, if continued for a long time, in most instances is probably injurious. His made some interesting observations which are pertinent to this subject. He finds that when acid sodium urate is injected into subcutaneous tissue the capsule formed around the acid remains in an early stage of connective tissue formation. But if alcohol be given repeatedly to animals, in small doses, the capsule develops into true fully-formed fibrillary connective tissue, which is less liable to permit the removal of uric acid. In elderly people, or in the feeble, whisky may be given in moderation, with excellent results.

Exercise.—In all gouty cases exercise is of the greatest value. Active out-of-door exercise is, of course, the best, but when for any reason this cannot be taken passive exercise in the form of massage and resistance movements will be found a most valuable substitute. The amount of exercise, its form and the time of taking it, should always be specifically ordered, otherwise the best results wil not be obtained and positive harm may ensue.

Climate has, undoubtedly, a certain influence on the well-being of these people, and a dry inland region of moderate altitude will in the majority of instances be found the best. Sudden changes in temperature are harmful, and exposure of all kinds must be sedulously guarded against. In the selection of a spa, we should seek to have these conditions, if possible, and we should not forget the influence that a pleasant environment will give. The gouty patient is irritable and worrysome as a rule, and cheerful surroundings, with diversions which do not tax his energies, will add very materially to his comfort and aid in restoration to a normal condition of body and mind.

An advantage of the spa treatment that I have not yet mentioned lies in the fact that we have the patient under much better control than at home. He goes to the Springs for the express purpose of the cure, his time and energies are given over to that alone, and if he be properly directed he will be so occupied by his treatment that he will have but little time for retrospection and worry. He is away from the cares of business and the thousand and one petty annoyances that wear upon him at home, so, with the rest and out-of-door life, the change in itself has a powerful influence for good.

In the treatment of chronically-affected joints, with removal of uratic deposits, the general treatment will be the same as that outlined above. In addition, there are various measures which we may employ to improve the local condition. Foremost among them is, perhaps, the local douche, either of hot water alone or of hot and cold used alternately.

The method of applying the douche is as follows: A fairly good-sized solid stream is thrown with considerable force upon the affected part. The water, which is at first as cold as it will come from the nozzle, is changed to hot after half a minute, and is made as hot as the patient can possibly bear it; this temperature is continued for a minute, when it is again changed to cold, the process being repeated for twenty or thirty minutes. The action is a purely local one and is produced by the great stimulating effect of the repeated alternating temperatures upon the circulation about the joint, thereby increasing tissue changes and favoring absorption. The stimulating effect is greatly enhanced by the force of the stream and this should be limited only by the comfort of the patient.

Massage of the joint should be used in conjunction with the douche and is best applied immediately after the latter, as the tissues then are in a relaxed condition and are more favorable to manipulation. When the enlargements of the joints are due to inflammatory thickening, and the uratic deposit is in the early stage, vigorous movements may be made to overcome contraction and break up slight adhesions, without danger of doing the joint harm, but if the joint be fixed by old uratic deposits which have already become calcareous, the manipulation of the part must be restricted to massage alone.

The hot-air treatment of such joints is in some instances of great service, and especially in those in which there are considerable pain and soreness it seems to give greater relief than anything else. Its effect upon the swelling is practically the same as that of the douche. Of late static electricity has been used quite a little in these joint cases and those who have had experience with it are very enthusiastic over its effects.

A most important feature in the successful treatment of joints is in having the treatment carried out under the direct observation of the physician. This is simple enough at the spa, and is one of the great advantages of spa treatment; but in town it is very difficult, if not impossible, to do this unless patients are treated in one's office.

If further experience with static electricity bears out the claims of its supporters as to the effect in restoring the joints, it will be to us who do a great deal of this work a tremendous help, as it certainly possesses many advantages for office treatment over any other.

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ON THE EARLY DIAGNOSIS OF PLEURITIC EFFUSIONS.[1]

BY JAMES K. CROOK, M.D.,

OF NEW YORK.

A person is taken ill with a chill more or less marked, followed by fever, pain in the side, catching respiration, cough and a certain amount of prostration. There is a limitation of movement on the affected side of the chest, with an increase in the movements of the opposite side. Fine crepitation may be elicited by auscultation. Possibly within a day or two dulness on percussion becomes apparent. The first thought of the practitioner is that his patient may have pneumonia; this is by far the most common disease giving rise to these symptoms and signs. Perhaps he informs the patient's friends of this fact and hazards an opinion regarding the probabilities of the case. Most often the practitioner is right in his diagnosis and prognosis, but it sometimes happens that the case does not follow his expectations. The patient does not die, but still he fails to get well. Perhaps the pain and fever decline within a few days, but the patient remains weak and short of breath.

A reëxamination of the chest is made and the dulness on percussion is found to be undiminished, perhaps increased. Probably the physician now recognizes the true nature of the case; he may fall back upon a diagnosis of pleuropneumonia and by judicious measures still acquit himself with credit. Unfortunately, this is not always done. The patient's condition being unrecognized the new indications for treatment are not put in operation. Perhaps the patient becomes strong enough on the subsidence of the more acute symptoms to get up and walk about. If there be only a simple serous pleurisy with a small effusion, it may be reabsorbed in a short time and all is well. In most of these unidentified cases, however, the patient remains weak and miserable. He is short of breath, his respirations are quick and labored, a short dry cough remains, he becomes pale and cachectic, and has the appearance of going into a decline. Sooner or later a second practitioner is consulted, or the patient repairs to a hospital or dispensary for treatment. There, with the aid of the history and a careful examination, a proper diagnosis is made, thoracentesis or pleurotomy is performed and in many instances a good recovery ensues. Not always, however; in some cases the long-continued presence of fluid, especially pus, in the chest-cavity has entailed such injury to the patient's lung or to his general system that he fails to yield even to the most skilful treatment, and he dies, because, as we may truly say, his condition was not sooner recognized.

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[1] Read before the Greater New York Medical Association, 1901.

Every physician who is connected with the chest department of a dispensary or a hospital meets with such cases; not often perhaps, but more often than is necessary. These patients begin with the statement that they "have never fully recovered from an attack of pneumonia they had in the spring," or they are "suffering from asthma which resulted from pneumonia several weeks or months previously." Possibly there is no well-marked antecedent history, the case having developed insidiously; but in most instances it will be found that the beginning of the case is connected by the patient with pneumonia. It is my belief that these neglected cases are not so frequently seen as in former years. The wider diffusion of effective rules of diagnosis and the expansion of our knowledge as to the proper management have undoubtedly served to curtail the number of neglected or unrecognized cases of pleurisy applying at hospitals and dispensaries for treatment. That such cases are still seen, however, even in well-to-do persons in private practice, furnishes my apology for bringing the subject before you.

I am not disposed to criticize the practitioner who fails at once to distinguish between pneumonia and pleurisy. He who is versed in the book of Nature knows that this is not always possible. In some cases the physical signs, as well as the symptoms which are present, do not admit of a positive decision early in the disease. It occasionally happens that both pneumonia and pleurisy are present in the same individual, while in other cases a pleuritic effusion follows as a sequel of pneumonia. But, as a rule, the two diseases are separate and distinct and we may almost always make out the differential points by a painstaking examination. The physical signs of pleuritic effusions as well as of pneumonia are too well known to rehearse in detail here. I will therefore simply refer to certain distinguishing features of the two diseases which I have found helpful in practice. The severity of the initial chill and the subsequent range of temperature are not always a safe guide. In some cases of empyema the rigor is of great severity and the fever which follows is altogether as high as in a sharp attack of pulmonary inflammation. In adults we should be wary of committing ourselves in cases of supposed pneumonia unattended by rusty or brick-dust sputum. This is one of the most constant and important evidences of real pneumonia and its entire absence gives a strong inference of pleuritic and not pulmonic trouble. The variation in the respiration-pulse ratio is important; normally we find four or five pulse-beats to one respiration; now, if the respirations so increase that the ratio is three to one, two to one, or perhaps one to one, the case is probably one of pneumonia. This point was strongly emphasized by the late Dr. J. West Roosevelt and in my own experience it has been a valuable guide. I will not here refer to the various changes occurring in the vocal fremitus and resonance, and in the auscultatory phenomena. These, as described in the text-books, are usually valuable aids, but cases do occur in which they serve rather to mystify than to enlighten us. It might be stated that egophony, when present, is a most suggestive sign of pleuritic effusion.

A marked increase of the semicircumference of the affected side may be taken as absolute evidence of accumulation of fluid. The contrary, however, does not always hold good; sometimes the fluid does not lead to an expansion of the chest, but makes room for itself by forcing the diaphragm down and by crowding the lung upward and against the vertebral column. The sound lung now doing most of the work receives more air, which fact may lead to an actual expansion of the normal side of the chest. Again, retraction of the diseased pleura may even result in a shrinkage in the measurements of the affected side. In a case under my care not long since thirty ounces of pus were evacuated from the chest of a man whose affected side measured three-fifths of an inch less in semicircumference than did the healthy side.

Displacement of the viscera, especially of the heart, is a sign of the utmost value in effusions. If the accumulation be on the left side, the heart is carried over toward the sternum, and the further it is so pushed the more significant of effusive pleurisy it becomes. I have had under observation cases of almost complete transposition of the heart, the apex-beat being found in the region of the right nipple. If the disease be on the right side, a larger effusion is required to displace the heart than if it be on the left. When this occurs, it will be found that the organ is raised as well as displaced to the left. At the same time the liver is borne downward, in some cases as low as the umbilicus.

The percussion note in children is seldom absolutely flat in pleuritic effusion, but may more properly be termed dull. Sometimes a transmitted tympanitic note resulting from gaseous distention of the bowels and intestines may be elicited over accumulations of liquid in the chest. In my experience the sense of resistance offered to the percussing finger is as valuable a sign as the percussion note itself. Liquid opposes a much more unyielding front to a percussion stroke than does air or even a consolidated lung, and the hard, solid sensation to the finger receiving the percussion blow, attended by more or less pain, is very significant. Another point in this connection, it seems to me, is somewhat ignored of late, *viz.*, the shape of the upper line of percussion flatness in pleurisy with effusion. It should be borne in mind that this line does not form an exact horizontal or hydrostatic level, but presents certain curves which will be found to appear with great constancy in accordance with the amount of fluid present. In slight effusions, say from two to three inches in depth, the upper boundary of percussion dulness or flatness begins at the spinal column, passes outward for a short distance and then curves downward, having an upper convex line of dulness. In medium effusions extending up from the bottom of the pleural cavity from three to six inches, the line of flatness beginning at the vertebral column passes horizontally outward for perhaps two or two and one-half inches, then rises to the upper axilla or even to the shoulder and passes downward and forward to the anterior border of the pleural cavity, forming the letter S curve of Garland. In great effusions the liquid may rise completely to the summit of the pleural cavity, the line of flatness being continuous with the chest itself. In other cases of extensive effusions the upper line of the fluid may be found in front just below the clavicle. In this situation the line extends gradually upward as we percuss outward from the sternum, forming a curve with the concavity upward. It requires considerable care and time to determine accurately these lines, using a very light percussion stroke, but the pains taken are well rewarded by their detection. The upper line of medium effusions is most easily made out and furnishes the most valuable evidence of any of these curves.

If, with all of these methods, we are still left in doubt as to the nature of the case, we should not hesitate to employ the exploring needle. It is only by this means that we are able to determine positively whether an effusion be of a serous or of a suppurative character, or to diagnose with certainty the presence of encysted accumulations.

REPORT OF A CASE OF REMOVAL OF THE GASSERIAN GANGLION.[1]

BY JOHN F. ERDMANN, M.D.,

OF NEW YORK.

At the February meeting of this Society in 1899, I presented a paper citing one case of removal of the Gasserian ganglion (*N. Y. Med. Jour.*, May 6, 1899) with recovery, for persistent tic douloureux; it is my pleasure to-night to report to you the history of a second successful case.

The patient was sent me by Dr. Chaffee of Allentown, N. J., on June 7, 1900, and gave the following history: R. C., male, aged forty-five years. No occupation. Had a brother who died at the age of forty-four of carcinoma of the stomach. Father died of carcinoma of the tongue; a sister died of some chronic intestinal trouble. At the age of fourteen he sustained an injury to his back which, after a protracted period of ill health, resulted in hunchback of marked degree, and he has had asthma ever since. From the age of nineteen, *i.e.*, 1874, till the age of forty-one, 1896, he was as well as could be, considering his persistent asthma and his dorsal curvature. At this time while wiping his face he felt a sharp pain in the region of his right ear; this pain continued for about fourteen days and disappeared, without any medication, and did not return for about one year. While washing his face and rubbing his lips, he noticed the same character of pain in his cheek that he had observed a year before. This pain continued with such intensity that the services of a dentist were sought, who extracted his two upper molars and the wisdom tooth of the right side. Obtaining no relief from this procedure and losing flesh and appetite, and the pain becoming more intense, he finally sought the services of a surgeon in Philadelphia, who excised the mid-division of the fifth nerve and Meckel's ganglion. Relief for six months was all that this operation gave, except that he gained in weight.

February, 1900, the pain was again felt in the same place and occasionally seizures located in the distribution of the inferior division of the fifth nerve occurred. At this time his paroxysms of pain would last as long as an hour, while before the neurectomy of the superficial portion of the mid-division they would last but a few minutes at the most; now the seizures were also more frequent. During this period he was given practically all the local, internal and hypodermic medicaments that have ever been used in these cases and in powerful dosage. On two occasions thirty to forty minims of a 5-per-cent. solution of cocaine hydrochlorate were used with temporary relief. At the time of his visit he had become a thorough morphine habitué, using never less than ¾ grain daily. Biting solids induced paroxysms, so that he now took only liquid food and that sparingly. There had been a loss in weight of thirty pounds or more.

June 30, 1900: Examination showed the patient to be about 5 feet 2 inches in height, with a pronounced posterior dorsal curvature; he was anemic; he had a pinched and old expression, and his mentality was retarded. His chest was emphysematous; he was asthmatic. A mitral regurgitant murmur was present. Speech was slow and labored, and efforts at speech and swallowing were painful. A wad of tightly-rolled muslin, ½ inch in diameter, was firmly grasped between the teeth in the left side of his mouth to prevent contact of the upper and lower teeth on the right side. He was more than willing to be operated upon—in fact, had come to town to make all arrangements for an operation.

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[1] Read before the Society of the Bellevue Alumni.

I advised a thorough course of iodide in addition to the treatment advised by Dr. Charles L. Dana. This was thoroughly tested, the patient taking as much as ½ grain of stychnine per day with fractional doses of morphine. On July 30th, about fifty-three days after beginning treatment, his patience and endurance having come to an end, he again saw me and begged that he be operated upon. There was an evident loss of flesh and he stated that the paroxysms of pain were more frequent and more severe than in June; on two occasions he had been given an injection of 60 minims of a 5-per-cent. solution of cocaine and this had been followed by temporary relief.

On July 31st, under chloroform and ether, we operated upon him after the method of Hartley-Krause. The osteomuscular flap was readily turned down and the cerebral fluid evacuated by incising the dura. Upon raising the dura from the base of the skull to expose the ganglion and its distribution, there was quite a severe and constant venous hemorrhage. Work was proceeded with by rapidly sponging and stripping up the membrane, then tamponing for a few minutes and attacking the region with further progress until, finally, the ganglion and its middle and inferior branches were removed. A small rubber-tissue drain was inserted. The bonv portion of the flap was then removed, because it had been loosened from its periosteal attachment during the extensive manipulation for checking the hemorrhage.

Although the patient had not entirely recovered from the effects of the ether, the next morning, *i.e.*, at the end of twenty hours, he begged piteously for a roll to eat, as he felt no pain and had brought his teeth together without the usual painful result. There was a rise of temperature, and, although I was aware that elevation of temperature occurs in some of the cases as a result of disturbance of the basal heat centers, I was tempted upon the seventh or eighth day (the drain having been removed at the end of forty-eight hours) to reopen the wound, thinking I had pus to deal with; the result was negative. Again on the eleventh day I reopened the wound with a negative result. For ten days he had a type of mania accompanied by constant and irrational conversation.

He was allowed solids on the third day, eating the ordinary hard breakfast rolls with a relish and without pain. During intervals of lucidity he could not begin to express his gratitude to all for his relief. It might be said that his delirium may have had some association with the fact that no opium or its salts had been given him at any time following the operation until the seventh or eighth day, and at this time the delirium was observed to diminish. He was discharged in the third week, perfectly free from pain, with an increase of several pounds in weight and an enormous appetite. There were no trophic changes in his eye, which during the post-operative condition was left open but washed a number of times daily with a solution of boric acid. The opium habit was practically cured within three months after his return home.

On January 4, 1902, he lost his wife, to whom he was deeply attached. Although apparently bearing up under his severe loss, his uncle says that a very severe shock had been given to his system, for on January 7th he awakened and found his left extremities somewhat paralyzed, being able to move the leg and arm only to a slight degree; there was thick speech; on the 14th the condition had improved markedly, so much so that he could pick up a pin and walk with assistance. During this period of eighteen months there had been no pain and no eye symptoms; there was a gain of forty pounds.

60 West 52d Street.

THE ETIOLOGICAL CLASSIFICATION OF VARICOSE VEINS OF THE LEGS.

BY WILLIAM S. TERRIBERRY, M.D.,
OF NEW YORK

A REVIEW of the literature of the subject of varix shows a remarkable diversity of classification, with a separation into groups, based upon clinical appearances, anatomical situation, existence of predisposing cause, or action of exciting factors. However, each consideration of treatment, radical or palliative, takes into account the disturbance of function of the various elements of the circulation and applies itself to the removal of the cause in each individual case. Further, these considerations of remedy take into account the action of the exciting causes rather than their clinical character. Hence, for practical purposes it might be proper to divide the various classes of varix into groups according to the etiology in each particular type.

Pathologically the structural changes involved bring about four different conditions, as follows: (1) Simple dilatation, cylindrical or fusiform, the venous walls and valves being more or less the seat of structural change. (2) Dilatation with actual lengthening of the affected vessel, considerable change in the walls and valves and a tortuous cirsoid course. (3) Circumscribed fusiform dilatations, throughout the entire vessel-wall or a portion of the diameter of the vessel-wall. In the latter instance the dilated portion is extruded from the main trunk of the vessel and forms an aneurismal sac with large or small opening into the vein. The walls of these sacs are greatly changed from the preexisting coats of the vein. Such extrusions may be single or multiple and the vein itself may be simply dilated or the seat of cirsoid varicosity. (4) A number of dilated and cirsoid veins with aneurismal sacs, in close proximity, become adherent. The walls thin out and disappear, cavities are formed, opening one into another, with a flow of blood through these communications. These differing conditions may all exist in a single vein or set of veins and may be regarded as simply successive stages in the progress of the disease. The cellular change is a hyperplasia affecting all the structures of the venous walls, due to continuing distention and congestion. The veins, as the arteries when the seat of fibroid process, may be also the site of cell degeneration, although to a less degree. Obliterating endophlebitis may occur, but does so rarely. Thrombosis in varices is caused by the same factors that predispose to it in normal vessels, and these factors act more efficiently in the diseased vessel. The liability to thrombosis is greatest at bends, angles or pockets which occur in the course of the varix and at points at which the amount of motion is greatest. According to Bennett the spread of the thrombosis is checked at the venous valves rather than at the nearest collateral branches. The thrombi rarely become detached; occasionally they are infiltrated with the phosphate and sulphate of calcium and the sulphate of potassium and become phleboliths. Varix of the deep veins is of the same nature as that of the superficial vessels, but it is more limited in extent and of more rare occurrence.

The return flow of the blood depends on the driving force of the heart transmitted through the elastic recoil of the arteries, on the integrity of the venous walls, and on efficient action of the venous valves. Accordingly, the predisposing causes of variose veins depend upon inherent or acquired defect in any of these three elements.

The explanation offered by Trendelenburg of the mechanism of the exciting causes is accepted by a number of observers as the sole and only theory necessary. Trendelenburg, basing his deductions on his experiments with cases of varix of the internal saphenous and its main branches, claims that the dilatation is due to a regurgitation through the valves of the internal saphenous with an access of pressure from above downward. The inferior vena cava, the iliac veins and the upper portion of the femoral are unprovided with valves. These vessels, therefore, contain a column of blood extending from the diaphragm to the saphenous opening unsupported by valves. Gravity acting through this column of blood forces it downward against the restraining valves of the femoral and internal saphenous veins. An increase of intra-abdominal pressure assists gravity and subjects the valves to still greater strain, while chance muscular movements, still further increasing the intra-abdominal pressure, force open the valves and regurgitation results. Delbet calls attention to the fact that there may be degrees of incompetency of the venous valves. He states that, in those cases in which the dilatation takes place low down on the legs, and in those in which the saphenous veins and their main branches are not affected visibly, the degree of incomptency of the valves is small and that only enough blood is regurgitated to dilate the more remote branches. When the degree of incompetency is extreme the saphenous veins and their main branches are affected. He bases upon observation his belief that every case of varicosity of the superficial veins is caused by a regurgitation through the more or less incompetent valves of the saphenous veins. It would seem that gravity is held responsible for too great an influence. In those cases in which there is present no pre-existing defect of the valves or of the venous walls, gravity of itself would have no opportunity to cause such a regurgitation. The column of venous blood ascending against the force of gravity is supported by the transmitted power of the heart's action; at whatever level of the venous system, this power is sufficient not only to support the column of blood, but to cause it to move upward against the force of gravity; so long as the impelling force is able to overcome gravity and still has reserve energy sufficient to drive the blood onward, the venous valves will not be called upon to act. When, however, an obstruction placed higher than the valves requires the expenditure of energy in forcing the current past it, equal to or greater than the excess energy remaining beyond that necessary to balance the force of gravity, then the valves are closed by a downward force, equal to the force expended against the obstruction. While such a closure exists, the valves do not support the weight of the superincumbent column of blood, that being balanced by the upward pressure of the ascending column of blood against the inferior surfaces of the valves. The valves support only the force of the energy expended against the obstruction and for such a time as the obstruction exists, or until the venous pressure below the valve becomes greater than that above, when the valves open again. Should such an obstruction be permanent, the continually-recurring distention of the vein both above and below the valves would in time cause the vein to become permanently dilated and the valve incompetent. Especially would this be the case when predisposition to dilatation existed and the force was exerted on the wall of the vein rather than in the upward movement of the blood.

In another case with a complete and very suddenly occurring obstruction, the reflected force downward from the obstruction would cause such distention and dilatation above the closed valves that a return to the normal caliber would be impossible. The stenosis when above the saphenous valves is due either to actual narrowing of the lumen of the superior vessels or to increase in intra-abdominal pressure, this latter being due either to muscular action, to enlargement of the viscera, or to the presence of tumors in the abdominal cavity. Distention and regurgitation having been established, the increased quantity of blood contained in the dilated vessels necessitates an increase in the weight to be supported by the driving force, and without a corresponding augmentation in that force allows gravity to assist materially in further distention and regurgitation, acting more and more powerfully as the valves are overcome successively from above downward. The cause of this class of cases, therefore, is regurgitation based upon stenosis; the force primarily dilating the vein and rendering the valves incompetent is the force of the action of the heart, with gravity as a secondary factor.

Another class of cases following obstruction from constriction, thrombosis or obliteration of a large number of veins inferior to the saphenous valves results from stenosis by a narrowing of the total sectional area of the return circulation and regurgitation through the saphenous valves. The obstruction diverts the entire venous circulation to the remaining patent veins and, in order that the blood may be returned in the same quantity that it was delivered, there must be either a dilatation of these active veins or a compensatory increase in the speed of the current. There being a limit to the distensibility of the vein walls, an increase in speed must necessarily follow. The energy of the heart's action, being in part dissipated by overcoming the increased friction from the narrowed course of the circulation, supports the ascending column of blood with diminished efficiency. Should this diminution of the driving force cause it to be less than the force of gravity acting upon the column of blood above the saphenous valves, those valves close and by their action prevent regurgitation. When the pressure below exceeds the downward force the valves again open and the upward flow recommences. The constant action of the valves, and the recurring distention of the vein both above and below the valve—the one from the force of gravity, the other from the force of the heart's action—cause the valves to become incompetent. Regurgitation following the valvular incompetency, the force of gravity at lower points acts more strongly and overwhelms the valves from above downward with increased power. To this mechanism there can be credited those cases in which the exciting cause is a thrombosis of a considerable number of veins either of the superficial or of the deep set, those due to the wearing of tight garters or constricting bands, with or without the formation of thrombi under the site of pressure, and those due to prolonged activity of the muscles of the leg with compression of the deep veins.

There is a third class of cases due to obstruction of single veins or of an inconsiderable number of veins, caused by thrombosis, traumatism or local constriction, with varicosity of the branches and portions of the main trunk of the vein or veins. Such cases are due to small anastomosing connection with the deep veins, and so to distention of the vessels due to an insufficient outlet. The energy of the heart's action is here expended upon the vessel-walls and regurgitation is prevented in the communicating branches by the contraction of the skeletal muscles and the numerous valves of the deep veins.

In conclusion, then, it may be proper first to make a broad distinction between those cases which occur with predisposing cause and those cases in which there is no acquired or congenital defect in the vascular apparatus. Further, with or without predisposing cause, all cases of varicose veins may be placed in three groups, *viz.*, (1) those cases due to regurgitation following stenosis above the saphenous valves; (2) those cases due to regurgitation with stenosis inferior to the saphenous valves; and (3) those cases due to stenosis without regurgitation.

148 West 74th Street.

A PECULIARITY OF VISION, WITH ILLUSTRATIVE CASES.

BY FREDERICK C. RILEY, M.D.,
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A PECULIARITY of human nature, even among the intelligent, frequently noticed by the specialist is the apparent indifference individuals manifest to their own weaknesses or natural defects, shown by the imperfect results they obtain from the use of the special senses. Quite recently several patients referred to me from various sources, complaining of headaches, neuralgias and kindred phenomena, in whom examination has revealed only the existence of a visual perception far below the average, had no suspicion that their sight was defective, but on the contrary considered it equal to that of the average for distant objects. Satisfied in this respect that all was well with them, they sought relief only for the distressing accompaniment of age as manifested by their inability to read, sew, etc. Appended is a list of the findings upon examination of a few such, which clearly speak for themselves.

Case I.—Mrs. S. A., aged fifty-one years, V.O.D. $^{20}/_{100}$, with + 2D raised to $^{20}/_{20}$. V.O.S. $^{20}/_{100}$, with + 2D also raised to $^{20}/_{20}$. For reading, etc., + 5D was ordered. The visual acuity in this instance is seen to be but one-twentieth of the normal, notwithstanding each eye was perfectly healthy in every respect, and still the patient was never cognizant of the fact that others could see much more keenly.

Case II.—Thos. K., aged fifty years, an engineer, had no knowledge of visual defect at a distance when he presented himself for examination, which revealed the following condition: V.O.D. $^{20}/_{50}$ with + 2.50 = $^{20}/_{20}$. V.O.S. $^{20}/_{200}$ not improved by glasses. Ophthalmoscope reveals in left eye dense opacities of the lens, accounting for loss of vision in this eye. His presbyopia, amounting to + 5D, was solely accountable for his consulting an oculist.

Case III.—Mrs. A. McC., aged fifty-five years, unable to read the largest type on the test card at a distance of twenty feet, is found upon further test to be able to read $^{20}/_{20}$ with each eye with a + 5D, requiring + 7.50D for reading. Prior to the time of examination she, like the foregoing, had not used glasses for distant vision, nor did she realize till sitting before the test card that her vision was below the average or in any degree faulty.

Case IV.—Miss H. W., aged thirty-three years, complains of constant headache which is augmented by close application. V.O.D. $^{20}/_{100}$. V.O.S. $^{20}/_{100}$; with + 6D, vision in each eye raised to $^{20}/_{30}$ plus. While no presbyopia is to be encountered at this age, her subjective symptoms were by her held to be wholly due to the effort of reading, etc., and her surprise at the improvement in visual perception made by the glasses was very marked, as she had always supposed she could see at a distance as well as the average if not better. While none of these cases occurred in the so-called higher walks of life, they all occurred among the intelligent class. They show, perhaps, quite strikingly how poorly equipped some are by Nature in a visual way, as well as how self-satisfied some beings can become with a minimum of sight. Had each one of them possessed a more inquiring turn of mind it is doubtful whether they would have attained their respective ages without resorting to glasses.

THE MISLEADING SIGNIFICANCE OF OVARIAN PAIN.[1]

BY C. LESTER HALL, M.D.,

OF KANSAS CITY.

I wish in the beginning to say that I recognize the existence of actual pathological conditions in the ovaries, tubes and pampiniform plexus which demand surgical interference in order to obtain relief, and I believe I may claim a ready willingness to resort to such measures in proper cases. With this disclaimer as to my position on the subject, I feel that I am warranted in asking your consideration of some conclusions forced upon me by a somewhat long experience. When we consider the wonderful change in the practice of gynecologists within the last decade, preceding which oöphorectomy was the fate meted out to every painful ovary by aspiring surgeons, I feel that I am justified in claiming that pain in the ovary does not necessarily depend upon pathological changes, and that the rational conclusion in considering so sensitive an organ is that the pain experienced is often reflex and sympathetic.

We talk a great deal of the importance of recognizing uterine reflexes in their various manifestations, and yet I am convinced that we often fail to recognize in ovarian pain a genuine uterine reflex. Pain in the pelvic and abdominal cavities from defective elimination by kidneys and bowels and auto-infection produced thereby is recognized by every careful observer. I am satisfied that we, as gynecologists, do not sufficiently consider the symptomatology in diseases of women. Such is our haste, quickened by preconceived opinions as to the conditions causing the trouble, that we arrive precipitately at conclusions. When we consider the close anatomical relations between ovaries and uterus, it seems strange to me that we have not recognized the close sympathetic conditions that must exist and consign every painful and even tender ovary to total ablation. We know that infection, as a rule, progresses from the endometrium to the tubes and ovaries, and experience has taught us that when this pathological condition exists and when one ovary with the tube is removed, sooner or later the other tube and ovary become involved. These are actual conditions seen by us all, but we fail to take cognizance of the possibility of a reflex or sympathetic pain in the ovaries with an inflamed endometrium and a stenosed cervix.

It often happens that women consult me for what they consider ovarian disease, and with bimanual examination and palpation I find the ovary tender, as, indeed, even every healthy ovary is when brought between counterposing pressure; but further investigation shows that the real tenderness and pain are experienced when the uterus is palpated and elevated in the pelvic cavity, satisfying me that the source of the trouble is not in the ovary, but in a parametritis associated with endometritis. In these cases, while palliation of the distress measurably follows the hot douche and the hygroscopic tampon, the real and marked relief follows dilatation of the cervix and the application of antiseptics to the endometrium. When treated in this way my patients soon cease to complain of their ovaries and recognize the uterus and its immediate surroundings as the *fons et origo* of all their trouble. With the subsidence of the uterine catarrh and the general improvement that follows the treatment, my patients gain in appearance and strength. Their faces no longer present the troubled and careworn expression, and the general appearance of relief is so manifest as to be recognized by the laity; furthermore, these women, often sterile, have become proud and happy mothers. In many cases, when I could obtain the consent of the patient or when her time for treatment was limited, I have resorted to curettage with the gratifying result of giving entire relief to my patient.

Case I.—Mrs. S., had a miscarriage April 7, 1895. With blunt curette the uterus was thoroughly cleaned out and the patient soon apparently recovered. Since that time, however, she has had frequent attacks of pelvic pain, especially within the ovary, so marked that at one time I felt sure it would have to be removed. A few dilatations of the cervix and applications to the endometrium have from time to time relieved her of all symptoms, and while she has never borne children she is to-day a healthy woman.

Case II.—Mrs. R., who had suffered for years with pelvic pain referable to the ovary, consulted me in January, 1900, for severe pain in the right ovary. So intense was this pain that I felt apprehensive of a pathological condition, and told her that she would in all probability have to undergo a surgical operation. Her pain, though intense, was associated with little or no fever, but with nervous chills, headache, etc. She was nulliparous. Notwithstanding this severe pain in the ovary, digital examination revealed the fact that the principal point of tenderness was in the uterus and its immediate surroundings. The same method of treatment, dilatation with antiseptic applications to the endometrium, in a short time relieved her. In July, 1901, this same patient consulted me for a similar condition with even more aggravated and marked symptoms of pain in the ovary, loss of flesh and general depreciation of the vital forces. The same plan of treatment relieved entirely the pain in the ovary; and while there still exists some evidence of parametritis she no longer has pain in her ovary and declares that she is quite well.

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[1] Read before the Western Surgical and Gynecological Association at Chicago, December 18th, 1901.

Case III.—Mrs. R. W. S., from Raton, New Mexico, was brought to my office by her husband in July, 1899, for examination. I found that she had suffered for a long time with pelvic pains and, as she described it, "pain and tenderness in the ovary." She was very much run down in health and presented a delicate appearance. After completing my examination I was asked if it was necessary that her ovaries be removed. I told her that I thought not; that the pain she had in her ovary was a sympathetic manifestation of disease of the womb; and that I thought she might be relieved by local treatment. Whereupon her husband said, "Why, Dr. —— examined my wife to-day and said nothing but the removal of the ovaries would give her any relief." I protested that as his wife was a patient of Dr. ——, who was my personal friend, and in whose ability I had confidence, he should not have brought her to me for examination. He said he had paid the Doctor and proposed to pay me and then decide what he would do. I advised and insisted upon his taking his wife back to my friend, which he declined to do, saying: "You have already said that you believe she could be cured without operation, and as I am not committed to Dr. —— I shall insist on your treating her." As there was nothing left for me to do I consented and did treat this woman, with the result of rapidly relieving her of her symptoms and in a short time she returned to her home in New Mexico. About a year later she sent me a photograph of her baby in her arms. Now, it may be argued, and perhaps justly so, that because this woman bore a child is no evidence that one ovary or both were not diseased. Granting the correctness of such a claim, it must be acknowledged that this woman, who desired maternity above all else, could not have become a mother had my friend removed her ovaries.

These are only a few of many histories I could relate. Suffice it to say that, along with the trend toward conservatism in the treatment of diseases of women, the position that I take in reference to ovarian pain is, in my humble opinion, entitled to careful and serious consideration. To him who is an operating gynecologist only, I am aware that my position seems ridiculous, and perhaps to many my practice will be denominated "tinkering"; but actuated, as I am, by a desire to arrive at sound logical conclusions, to do the greatest good to the greatest number with the least possible harm and to preserve to woman her sexuality, I have been emboldened at the risk of incurring criticism to present this paper.

MEDICAL PROGRESS.

MEDICINE.

Electric Shocks.—With the rapid spread of the use of electricity in every business and in every household, the problems which deal with the relations of human life to the current become more and more important as time goes on. A remarkably interesting paper by F. B. Aspinall (Lancet, March 8, 1902) contains a series of questions given to the medical profession by an up-to-date and thoughtful electrical engineer. They may be summarized as follows: (1) Is everyone susceptible to an electric shock? (2) Is a person suffering from disease more liable to be fatally injured by an electric shock than a person in good health? (3) Does the physiological condition which a person is in at the time of his receiving a shock make any difference? (4) Does the path which the current takes through the body have any effect as regards the shock proving fatal? (5) Does the question of contact made and whether or not burning takes place have any effect as regards the shock being fatal? (6) Can a person receive a fatal shock without giving the "cry"? and also can he speak after receiving a fatal shock? (7) Is an alternating or a direct current shock more likely to prove fatal? (8) Cannot medical men give a somewhat more certain method of saying whether or not a man is dead? (9) Cannot something more be done than at present to help those who receive a severe shock? His answers, which he distinctly states are made from the standpoint of an electrical engineer rather than from that of a physician, are as follows: Different people are undoubtedly differently affected, but the same person under different conditions does not feel the same, although there is no absolutely reliable proof whether or not every one is equally susceptible. In answer to his second question he says that it seems to him of the utmost importance. Some years ago he was in the habit of measuring the electrical resistance of a number of friends, and it was found that one man was always the lowest, although they all varied. Subsequently it was found that he was suffering from kidney disease; it would be interesting to conduct a series of experiments to determine the electrical resistance in patients of this type. That the mentally-weak are peculiarly resistant or lacking in sensitiveness to the electric current is undoubted. As interesting proof of this he cites the case of a woman of this character who practically put out of business the fakirs of a bazaar where money was placed in a bowl of water charged from a Ruhmkorff coil. She removed it with so little inconvenience to herself that she had to be paid to leave the place. The most interesting point touching on his third question is whether a heavy sweat affords protection. In all probability, he concludes, it does by shunting the current. He had interesting experiments conducted upon himself while asleep. His assistant turned into him a shock which during waking hours would have been extremely painful, and yet it failed to arouse him. As to the effect of the path of the current through the body, there is no doubt that this is of extreme importance. Currents of deadly strength may pass through limbs alone or through limbs and one side of the body without necessarily being fatal, but if they pass from hand to hand the outlook is much graver. The question of contact has been very thoroughly considered. Not only must contact be good, but the area must be sufficiently great to carry the current. The greater the burn the better the prognosis for life. This will probably be disagreed with, as the usual belief is that large burns indicate severe shock. The "cry" is best described as a half sigh, half shriek; it is not necessarily given. It is possible for one to receive a fatal shock and speak intelligibly after it. As to the problem regarding the nature of the current, he concludes that there is nothing more dangerous in one system than in another. It is purely a question of voltage and of the conditions being favorable, and it must be remarked that such is generally the case in view of the vast number of shocks received and the small number of persons killed. What to do with those who have received an apparently fatal shock is the most interesting proposition. He cites two cases, in both of which there was apparently absolute lifelessness and in which there was recovery after nearly an hour attendant on the patient having been simply inverted, as is usually done in accidents during anesthesia. It is of great import to know whether this mode of flushing the brain may not be the simple means of bringing to life many who would otherwise be lost.

Facial Hemiatrophy Associated with Lesions of the Inferior Cervical Ganglion.—The recent anatomopathological note of Jacquet has revived interest in a condition clinically observed some time ago by Seeligmüller, and characterized by facial hemiatrophy, consolidation of the pulmonary apex and disease of the inferior cervical ganglion. Three cases have been studied personally by M. Bouveyron (Gaz. Heb. de Méd. et de Chir., Mch. 6, 1902). In these cases, simultaneously with an acute attack of pleuropulmonary disease at the apex, the patient experiences paresthetic sensations or intense neuralgic crises over half of the face and neck on the side corresponding with the thoracic signs. A few weeks later signs of local atrophy are noticed. The atrophy may progress slowly for a year or two and the process may then cease spontaneously. Perspiration may be entirely wanting in the atrophic area. Local vascular troubles are the rule. In one case the left temporal artery became markedly thickened, sclerotic and sinuous; the right temporal artery remained normal. Crises of cardiac acceleration may occur together with or independently of the attacks of neuralgia. In one case the skin of the upper extremity on the affected side was habitually cyanosed and cold and was the seat of marked hyperhidrosis. Unilateral falling of the hair in the frontoparietal region occurred in the same patient. One of Bouveyron's patients was a woman, thirty-six years of age, the second a girl of twenty-three and the third a child of seven years.

Osseous and Articular Complications in Typhoid Fever in Children.—Osseous suppuration due to the bacillus of Eberth is comparatively frequent. Articular lesions due to the same cause are only occasionally reported. The literature pertaining to articular complications of typhoid is reviewed by M. Mery (La Méd. Moderne, Mch. 5, 1902) in connection with the report of a case recently observed. In Mery's case the hip-joint and knee-joint were both involved, the articular disease being associated with, and in the author's opinion secondary to, an osteomyelitis of the femur. The lower extremities are much oftener affected than the upper extremities in typhoid fever; the tibia is more likely to be involved than the femur. The intensity of the osteitis varies; there may be a distinct bone abscess or merely rheumatoid pains in the extremities, which may cease without swelling or abscess-formation. A chronic process suggesting cold abscess, without elevation of temperature or marked pains, has been described by Chantemesse and Vidal. Another form of bone disease following typhoid is that in which exostoses appear at the level of the epiphysis; the exostosis may be tender. The predilection of Eberth's bacillus for lymphatic tissue and for the medulla of bone is well known. The hyperactivity of the bones of infants and children explains the relative frequency of osseous complications in these subjects as compared with adults.

Spinal Rigidity of Muscular Origin.—Medical literature has received during the past few years a number of accessions referring to a clinical picture the chief feature of which is spinal rigidity. Although the subject has been discussed in more than 60 original communications since 1897, notably by Bechterew ("Chronic Rigidity of the Spinal Column"), Strümpell ("Chronic Inflammatory Ankylosis of the Spinal Column"), Marie ("Spondylose Rhizomélique"), the pathology of spinal rigidity remains far from clear. R. Cassirer (Berl. klin. Woch., Mch. 10, 1902) recently found by a careful analysis of a series of cases that the clinical picture of disease of the vertebral articulations may be exactly simulated by localized muscular disease of the shoulder, the dorsal or the hip regions. Pain is produced by pressure over or contraction of the affected muscles; the disease of the latter is furthermore manifested by involuntary contractions, enhanced mechanical irritability and tendency to fibrillary and fascicular tremors. There is no callus-formation, no swelling, no material atrophy, loss of power or alteration of electrical irritability. The carriage of the patients, the peculiar attitudes in bending and straightening the spine, the gait, all suggested disease of the vertebræ and hip-joints. The pains were those of muscular rheumatism and were especially intense in the transition from rest to motion. It is probable that many of the cases hitherto described as primarily articular were in reality muscular.

Morphine Habit.—According to all recent estimates, the use of morphine, not only as a drug for pain, but also as an intoxicant, is daily becoming an increasing evil. It is said that at least 10,000 persons in this country are morphine habitués, and that 10 per cent. of American physicians are slaves to some form of opium. Searles (Amer. Medicine, Mch. 15, 1902), who has had a prolonged and intimate professional association with this class of drug habitués, lays down the following rules for their treatment. The sudden and complete withdrawal of the drug is not to be practised, as few can stand the shock and a collapse, often fatal, is apt to result. Substitution of some other opium derivative is also unsatisfactory, and in many cases fails to alter the symptom-complex. Gradual withdrawal of the drug, or "tapering," is the method of choice in the vast majority of cases. In some instances, cutting the dose down by one-eighth or one-quarter each day results admirably; in others, a lessening of one-sixteenth is as much as can be effected without signs of depression. The complications which are apt to ensue are numerous, most important among them being restlessness, delirium, insomnia, gastric disturbances, dysentery, and heart-weakness. The nervous symptoms are often severe but controllable. As the amount of morphine is diminished, pushing the bromides, sodium and potassium, in daily increasing doses, is of decided efficacy, as much as 70 to 100 grains being given on the eighth to the twelfth day. Trional, in 30- to 40-grain doses at bed-time, is a fair substitute for the bromides. A hot salt bath at night, cold sponging in the morning followed by a brisk rub, Turkish baths of brief duration, are all excellent physical adjuvants in restoring nervous equilibrium. Tonics are generally of value, even if not distinctly indicated by a weak pulse or other sign; nux vomica and the hypophosphites may be prescribed liberally. Gastric and enteric disturbances are to be treated symptomatically. The food should be concentrated, easily assimilable, and non-irritating, such as broths, peptonized foods, etc. During the first two weeks, as a rule, the patient should be kept in bed, and may then be allowed, if in good condition, to take exercise of a mild nature in the open air. The care of a skilled nurse or institutional treatment is essential to success. The duration of the treatment and supervision should be not less than three months, and may often be prolonged to six.

The State of the Nervous System in Tuberculosis.--Omitting consideration of tuberculous affections of the meninges, one finds in phthisical subjects, according to A. Chelmonski (Rev. de Méd., March 10, 1902), more or less striking symptoms of hysteria or neurasthenia. Moreover, the state of the nervous system plays an important rôle in its influence upon the phthisical process itself. Chelmonski has observed that hospital patients, who for several months have been without fever and in good general and local condition, suddenly experience rise of temperature, loss of appetite, augmentation of cough and of pulmonary signs, after nervous excitement due to almost any cause. If such a reaction can occur, the bad effect of repeated nervous excitement on the general progress of the disease is obvious. Hence correct sanatorium treatment will combine fresh air, rest and diet with treatment of the nervous system by means of the method of Weir Mitchell, psychotherapy and hydrotherapy. When an individual is so constituted that separation from family and friends produces nervous excitement and consequent enervation the advisability of home treatment in preference to sanatorium treatment must be considered.

Latent Vaccinia.—The following remarkable case of latent vaccinia is reported by J. W. Washbourn (Lancet, Mch. 8, 1902). The patient, a two-and-a-half-year-old girl, was vaccinated two years ago in four places, only once and with very slight success; she had been ailing for about three days and examination showed red, swollen tonsils and submaxillary glands, stomatitis, and a temperature of 102° F. The following day "marks" were found coming out on the old vaccination sites. On the fifth day the temperature was 101.4°F. An exudation was on the left tonsil and a scarlatinaform eruption appeared over the chest and back. A younger child in the family was also ill with injected throat, vomiting and the same eruption. The diagnosis of scarlet fever was made. On inquiring of the mother, the following history of the vaccination spots was elicited. Four days before the child was seen, a dry sore was observed on the left arm at the site of the original vaccination. One day before the first visit three fresh red places with a scab over them were observed and on the second day of the medical attendance four spots on the left arm at the usual site of vaccination were found by the physician, all of the same size as a vaccination lesion, and each surrounded by a small red zone with a thin dry scab in the center. The appearance was exactly that of a mild vaccination. On the seventh day the writer of the article saw the patient in consultation and confirmed the diagnosis. On further questioning the mother, it seemed certain that no repeated vaccination had been performed. On examining the child there was very slight impetigo of the scab and the skin was clear elsewhere. The appearance of the marks on the arm and their arrangement were quite unlike anything in the way of a secondary infection from impetigo. There was no doubt that the child was suffering from scarlet fever and the one explanation that could be given was that vaccination had remained latent during two years and had started afresh with the onset of the scarlet fever.

Uremic Ulcers.—Attention is called by Dickinson in Allbutt's System to the rare occurrence of ulcers in the stomach and to their more frequent occurrence in the small intestine in the course of Bright's disease. The most usual symptoms are diarrhea, griping, abdominal tenderness and vomiting, to which may be added those of perforation. Osler, Anders and other writers, however, do not mention this complication, and it may therefore be well to bring it to the attention of physicians. A. Mathieu and J. C. Roux (Arch. gén. de Médecine, Jan., 1902) report a case of uremia in which the postmortem revealed large ulcerated areas in the small intestine, superficial ulcerations, and one deep ulcer in the stomach. All were evidently of recent formation, the surrounding tissues showing marked dilatation of the venules and capillaries, but no evidence of acute or subacute inflammation. The ulcers of the intestine were confined to the lower end of the ileum; their greatest diameter extended longitudinally; they were sinuous in outline and were superficial, involving only the mucosa. The submucous cellular tissue was much thickened. There were no interstitial or submucous hemorrhages, such as are sometimes found in these cases. The superficial erosions of the stomach corresponded with the intestinal lesions, and there were all stages between these and the deep gastric ulcer, which was of the type of the ordinary round peptic ulcer. Yet even this latter, which reached to the subserous coat, was not surrounded by any inflammatory zone except some glandular hypertrophy in its immediate borders. It was presumably also very recent. Such stomach lesions could easily be the causative factor in some cases of the uremic vomiting.

Influence of Massage on Albuminuria.—It has been known for some time that active muscular exercise increases the amount of albumin in the urine of nephritic patients. It remains an interesting question whether such an increase could be brought on by passive muscular movements in the form of the massage which is often practised in cases of anasarca as a palliative measure. E. Ekgren (Deut. med. Woch., Feb. 27, 1902) has made careful observations on the urine of two cases of granular atrophy and subacute parenchymatous degeneration and finds that under the influence of a general body massage a considerable increase of albumin takes place. It was also seen that resistance movements and exercises of the upper extremities produced the same results as did those of the lower extremities. Apparently, moreover, the system accustoms itself to this massage. Although the excretion of albumin is in itself not necessarily harmful to the body, but usually only an indication of the continuance of a nephritic process, there are cases in which this excretion produces renal irritation. The author suggests therefore that when body massage or "resistance exercises" are prescribed, a preliminary testing for albumin would be profitable and, when the edema of nephritic patients is treated by massage, watch should always be kept on the urine.

Pseudotuberculosis.—There are certain cases in which cough, dry and fatiguing, or with moderate sputum, night-sweats, loss of flesh, retraction and dulness above and below the clavicle, respiration high pitched, expiration prolonged, and subcrepitant or friction sounds lead to the diagnosis of tuberculosis, and yet are not due to the bacillus of tuberculosis. H. Grasset (Le Progrès Médical, Feb. 22, 1902) calls attention to rheumatism and digestive troubles as causes of congestion and chronic productive inflammation of the lungs, often followed by retraction or sclerosis. These tend to affect especially the apex of the lung and may be ranked as auto-intoxications, corresponding to gout, lead-poisoning, etc., in the production of connective-tissue in the various organs. He cites cases in which the apical signs were intermittent, corresponding somewhat with rheumatic attack, and other cases in which psoriasis, eczema and other cutaneous arthritic manifestations alternated with the pulmonary signs. Both this condition and tuberculosis are benefited by a healthy out-door life, but the rheumatismal or digestive condition would contraindicate superalimentation, such as is employed in tuberculosis. The author notes a sign of adhesions at the apex, *viz.*, a pain in the supraclavicular fossa on straining, as during defecation in the constipated. Potain, Fournet and others have noted cases of pseudotuberculosis of rheumatismal origin.

Banti's Disease.—As characteristic of Banti's dissease, P. Pribram (Präger med. Woch., Feb. 27, 1902) describes a chronically-enlarged spleen with diminution of both hemoglobin and the number of red cells. This constitutes the first stage and is identical with splenic anemia. Soon jaundice and urobilinuria and gradually ascites and the physical signs of hepatic cirrhosis appear. The disease develops in young persons and adults and there is as yet no clue concerning its etiology. The changes in the spleen are those of a chronic hyperplasia, in the liver an interlobular cirrhosis, and it seems that, because of the condition of the spleen, a chronic intoxication with anemia is set up and that the chronic sclerotic endophlebitis of the spleen sets up the cirrhosis in the liver. The absolute number of leucocytes is diminished and the small mononuclear cells generally are relatively increased. All cases should be put well under the influence of arsenic. If this be of no avail, splenectomy may be considered, since some cures as a result of this procedure have been reported.

Fallacies of the Widal Reaction.—When several symptoms point to typhoid and in addition the blood agglutinates readily in a dilution of 1:50 or higher, few will hesitate to make a diagnosis. Yet F. Lommel (Münch. med. Woch., Feb. 25, 1902) describes a case in which there were roseola, enlarged spleen, bronchitis and continuous temperature, and in which the Widal test was strongly positive. On autopsy there could be no doubt that the condition was really one of puerperal sepsis. Previous typhoid could be excluded. Theories are advanced by the author to explain this strange condition; it seems probable that the sepsis was induced by the colon bacillus or by some other organism of this group closely allied to the typhoid germ and that a severe invasion is capable of producing a substance in the blood antitoxic also to the latter.

Participation of the Peritoneum and Pleura in Diseases of the Liver.—With the exception of fatty and amyloid degeneration of the liver nearly all pathological hepatic conditions are accompanied by some degree of inflammation of the serous covering of the liver. Serofibrinous perihepatitis, writes L. Syllaba (Sbornik Klinicky Caposis, 1902, t. III., p. 1), if of a light degree, reveals itself by tenderness over the hepatic region; if more marked, distinct friction sounds are heard, which cease when respiration is suspended. Such sounds have been heard by Syllaba in two out of five cases of enlarged liver due to valvular disease of the heart. Perihepatic friction sounds may simulate pericardial or pleural rubbing. Great care must be taken to distinguish such sounds from true pleural crepitation. The latter may, however, accompany by extension a condition of perihepatitis, this combination having been observed in 14 cases of serofibrinous perihepatitis occurring in the course of pseudoleucemia, cancer and syphilis of the liver, biliary lithiasis and common catarrhal jaundice. When a pleurisy is found on the right side and is not clearly explained by known pulmonary or pleural lesions, the first step in clinical examination should be the examination of the hepatic region. In cases of doubt between cholelithiasis and syphilis of the liver, the presence of perihepatitis or of a localized dry pleurisy is unfortunately of no assistance, as both may coexist with either of the conditions mentioned.

A Case of Chloroma.—Only about twenty cases of this rare condition, which holds an intermediate position between the malignant tumors, especially sarcomata, and the blood-diseases, have been carefully observed. A full report of two new cases is presented by W. Rosenblath and W. Risel (Deutsch. Arch. f. klin. Med., Vol. 72, No. 1). In the first marked anemia and apathy, hemorrhage from the nose and into the skin, and prominence of one eyeball, owing to a retrobulbar tumor, were the marked symptoms, while shortly before death there was a great increase of leucocytes in the blood, the most numerous elements being mononuclear cells larger than the red cells and with narrow deeply-staining protoplasm and pale granular or reticular nucleus. On autopsy dense greenish tumors were found in various places, such as the deep muscles of the loins, the right orbit and the kidneys, and the bone-marrow appeared creamy and greenish. The second case showed similar symptoms, except that the exophthalmos was bilateral and more pronounced, cervical and axillary glands were involved and the mesenteric glands gave evidence of tuberculosis. The patients were respectively fifteen and eight years old and in both the disease ran a rapid course, extending only over several months. From the discussion of these and the previously-recorded cases, it appears that chloromata are grass-green or more yellowish or grayish tumors of firm or, more rarely, soft consistence developing generally from the cranial bones. The glands of the neck are often enlarged; the bronchial and mesenteric glands almost always and the spleen rarely. Metastases occur in the kidneys and lungs and less frequently in the liver and myocardium. In most cases the bone-marrow was found to participate in the changes. Considerable difference of opinion exists as to the nature of the growths, some considering them lymphomata taking their origin from the lymphatic glands, others regarding them as a variety of sarcoma starting from the periosteum. There is also no agreement as to the cause of the green color and it is an open question whether or not a distinct pigment is present. By exposure to air and preserving in the various fluids, it rapidly disappears but it is said that ammonia will restore it. It is difficult to say whether it is hematogenous or fatty in character or whether a distinct pigment is present or it is only a peculiarity of the cells to appear green in bulk; at all events, no pigment was found by the authors who consider the cause of the color most likely to be hemoglobin, especially since it is most intense in the neighborhood of the vessels. Most of those affected are young males. Apathy, anemia and its concomitant symptoms mark the approach of the disease; then follows the appearance of tumor, most frequently in the orbits or nasal cavities. The later signs depend more or less upon the locality, yet aural trouble, such as deafness or tinnitis, is seen often. Outside of general stupor few cerebral symptoms are noted, but headache, facial paralysis and apoplectic attacks have occurred. The spinal cord and its nerves may be involved by pressure. Much more important are the blood-changes; a strong diminution of the red cells, a hemorrhagic diathesis and the changes characteristic of acute leucemia belonging to the later stages of the disease. The course is about four months and there should be no difficulty about the diagnosis, but in doubtful cases of exophthalmos an ophthalmoscopic examination for optic neuritis or hemorrhage may be indicated. On histological examination the tumors are found to consist of small, round cells with large nuclei rich in chromatin and between the cells a connective-tissue stroma, so that there is a close resemblance to lymphosarcoma. Indeed, the tumors may be considered lymphatic neoplasmata analogous to those found in leucemia or pseudoleucemia and it is possible to decide what gives the lymphatic tissue the first impulse to proliferate; in one of the cases just quoted it might have been the tuberculous mesenteric glands, for though tuberculosis has been found to be present in a number of the cases, no more close connection between the two can be determined.

Severe Hematuria from Movable Kidney.—Blood in the urine in microscopical quantity is not unusual in movable kidney. Cases in which the loss of blood reaches such proportions as to produce serious anemia are comparatively rare; such a case is described by A. T. CABOT (Boston Med. and Surg. Jour., Mch., 6, 1902). The faulty position of the kidney at the first examination, the cessation of the hemorrhage after a favorable change of position, the renewed tendency to hemorrhage whenever a faulty position was resumed, and the final entire relief when the kidney was fastened in correct position, show that the case was one of serious interference with the renal circulation due to the downward displacement of the kidney. Most writers attribute such congestion to a twisting of the vessels, but Cabot regards this as questionable. Rotation of the kidney is an extremely rare condition, the common displacement being a simple slipping down of the whole organ. Swelling may be due to congestion or may be dependent on kinking of the ureter with resulting hydronephrosis. A kidney with short vessels would quickly feel the effect of a downward pull; in a kidney lying unusually high it is conceivable that this pull might produce considerable obstruction to circulation before the organ came down low enough to be regarded as a movable kidney. Cases of hematuria are occasionally reported in which no cause can be discovered, and in which cutting down upon the kidney and splitting the capsule effect a cure. Such cases, suggests Cabot, may be instances of congestion from a downward drag which has not been recognized but which has been corrected by the adhesions following the incision into the kidney.

Cholelithiasis.—Much progress has lately been made in regard to the etiology of gall-stones, especially by Naunyn of Strasburg. Instead of depending upon some constitutional condition or defective metabolic process, as is the case of urinary calculus, gall-stones probably form around a nucleus of precipitated bile salt resulting entirely from local changes. The calcium salts and bile pigments are readily precipitated whenever there is an increase in the albuminous constituents of the bile and this increase is particularly marked when inflammatory changes occur in the bile-passages. W. H. THOMSON (N. Y. Med. Jour., Mch. 1, 1902) shows that cholesterin is especially abundant when any digenerative process is going on, as there would be in disease of the gall-ducts, and this cholesterin is deposited around the nucleus. The most frequent causes of such catarrh is infection by micro-organisms, the bacilli coli communis and the typhoid bacilli being particularly apt to originate such disturbances. The latter may have laid dormant for many years before acting as an exciting agent. In reaching a diagnosis of cholelithiasis there is at times great difficulty, but attention should be carefully paid to the previous history in order to determine, not only the presence of the stones, but also whether there is any accompanying inflammatory condition. Pain is a very important and usually the first symptom noticed. The pain is sudden and, being caused by the ducts being put on the stretch, it always causes faintness and nausea. It is always paroxysmal and in these characteristics differs from inflammatory, pressure, or neuralgic pains. With the onset of pain the patient clutches his side as in lead colic or in tabes, and it is only when subsequent inflammation sets in that he objects to manipulation. Even when described as general the patient will often be able to show you where the pain began. When in the gall-bladder the pain begins over the ninth right cartilage and radiates around to the right horizontally and then upward between the shoulders. The fingers or thumb are often used to locate the pain. The pain of gastric ulcer is accompanied by much tenderness in the epigastrium and over the last ribs posteriorly. Displacement of the right kidney in women and various gastralgias may give a pain which somewhat simulates gall-stone colic. Tumor is not a very frequent accompaniment of cholelithiasis in spite of the popular opinion. The cystic duct is often occluded by inflammatory products preventing the entrance of bile into the bladder and if the latter is distended it generally contains nothing but a thin mucus. In fully one-half of the cases of gall-stones there is no jaundice. In order to have jaundice the stone must have passed through the cystic duct and obstructed the common duct and it will be continuous or intermittent according to the mobility of the stone. In general, one may say that the constant or intermittent presence of bile in the urine, also a jaundice which comes and goes, would be in favor of an icterus being due to gall-stones. This is a valuable sign, for all other causes of jaundice, even of catarrhal jaundice, either occur as a rule but once or change but little when once developed. A rise in temperature is a symptom of much importance when it occurs in cholelithiasis and becomes more serious in proportion to its continuousness. As septic chills are of toxic origin, so does the fever which follows imply absorption into the general circulation of toxins from inflamed or ulcerated biliary passages. A continued fever, with tenderness and rigidity and a high leucocyte-count, demands operation. The repeated irritation of the liver by calculi is prone to disturb the gastric digestion and hyperacidity is quite common. A vicious cycle sometimes seems to be present, of hepatic irritation causing gastric derangement and this, in turn, with its acid fermentation of the ingesta increasing the inflammatory condition in the biliary passages.

Ulcer of Esophagus.—It has been found that the diagnosis of pulmonary tuberculosis has sometimes been made on account of the loss of blood from the mouth which really came from an ulcer of the esophagus. M. I. KNAPP (Med. Rec., Mch. 1, 1902) reports five cases in which he believes the hemorrhage was from an ulcer, although in all instances treatment for tuberculosis had been persisted in for some time. The blood from an esophageal ulcer is bright red, unless it has run down into the stomach and become changed. It may be differentiated from a primary stomach hemorrhage by the use of the stomach tube. This should not be passed until the patient has recovered from the effects of the hemorrhage. The tube causes such irritation that it excites consequent circular contraction of the esophagus which holds the tube in its grasp. This contraction is also caused by the cicatrix after the healing of the ulcer. The appreciation of this condition demands some dexterity in handling the tube. It must not be forgotten also that enlarged esophageal veins, especially in cirrhosis of the liver, may rupture and cause large hemorrhages. A thorough examination of the chest is important in these cases, but even when some signs are found the author believes that the possibility of an esophageal ulcer should be kept in mind.

Localized Angiosclerotic Gangrene.—A very interesting case of presenile gangrene of the fingers treated conservatively with recovery is reported by T. B. Barringer (Med. Rec., Mch. 1, 1902). The patient was a housewife, thirty-eight years old, whose habits were excellent and in whom there was absolutely no history of syphilis. The first symptoms experienced were slight neuralgic pains in the arm later followed by a sensation as if the finger-tips had been burned. An attack of influenza of moderate degree occurred soon afterward and the pain in the fourth and fifth fingers of the right hand very rapidly became worse. The fingers were swollen and slightly reddened, and on the palmar surface of the last phalanges of the fourth and fifth fingers were several purplish, extremely tender spots. These spots became areas of dry gangrene and as soon as a line of demarcation was formed the terminal phalanges were removed. The pain was intense and the only local applications giving relief were ice-cold weak solutions of carbolic acid. Potassium iodide in small doses was given and hot dry sand baths were applied locally. There was improvement for several months and then there was a return affecting also the ulnar aspect of the hand, which was soon removed. Large doses of potassium iodide were then given, combined with the protiodide of mercury, and in a few days the pain abated. A slight recurrence of pain was relieved by the application of bandages saturated in 95-per-cent. alcohol to the hand and forearm. During the past eight months no recurrences have appeared and the part of the hand remaining has resumed a normal condition. A microscopical examination of the amputated parts showed an advanced panarteritis, with complete occlusion of the large vessels and an advanced chronic productive interstitial neuritis. There was an extensive infiltration of the tissues by small round cells found especially around the blood-vessels and nerves, "strangely resembling in places specific disease." So far as could be made out, the process was entirely localized, for even the radial and ulnar arteries have been perfectly soft and the pulse has had no tension. It is known that influenza is frequently followed by areas of gangrene, but the involvement of the vessel-walls and the extensive neuritis, both unusual in ordinary presenile gangrene, together with the excellent results following the use of potassium iodide and mercury, certainly point to a specific origin. The daily use of the applications of alcohol, as suggested by Buchner, seem to have had a decided effect, for the blood pressure was raised from 101 to 108 or 110 millimeters.

Diabetes Mellitus.—Kussmaul in 1874 was the first to rightfully interpret diabetic coma, and it was he who described the peculiar respiration which occurs at this time. A Mayer (Med. Rec., Mch. 8, 1902) describes this respiration as frequently being the first symptom of impending coma. It is of a peculiar sighing quality, the patient breathing with much exertion, using all the muscles of respiration, although the lungs and glottis are perfectly free. Inspiration is very deep and prolonged, expiration is short and of a groaning or moaning character. Respirations may be normal in number or increased to double the normal. Other initiatory symptoms are severe epigastric pain, nausea, vomiting, etc. A sudden shock or worry or a change of diet may induce the attack. A constant premonitory sign of coma is the appearance in the urine of a large number of short hyaline and granular casts, first described by Kültz. These casts appear a few days before the coma. The two most tenable hypotheses in regard to the causation of diabetic coma are (1) that of acidosis and (2) that of specific toxemia. In severe cases of diabetes the urine always contains sugar and also other products, such as acetone, diacetic acid, etc. The excretion of lime, magnesia and ammonia is increased and the blood becomes less alkaline. This acidosis is the result of the disintegration of fatty acids and not of proteids, as was formerly believed. As these acids are formed they require ammonia, lime, etc., to neutralize them for excretion, and when the ordinary supply is insufficient the lime and magnesia of the bones is called upon, but a point of tolerance is finally reached and these various acids then cause an acid intoxication. The second theory is simply a continuation of the first by the supposition that these acids act upon the proteids in a specific manner producing a toxemia. Symptoms of coma necessitate the rapid addition of alkalies to the system and the bicarbonate of soda has been widely used by mouth, rectum and intravenous injection. The author suggests another rational method, that of the introduction into the system of a sufficient quantity of ammonia to unite with the various acids found in the condition of acidosis. He has tried, and apparently successfully, the use of urotropin, a chemical combination of ammonia and formaldehyde which in the presence of an acid splits up in the body into its component parts. This disintegration occurs in the kidney, the ammonia being rapidly absorbed by the kidney veins, thereby entering the system again to neutralize any acids present.

Mortality of Pneumonia.—During the year 1890 the average length of life in the United States was 31.1 years, and in 1900 this mean average had risen to 35.2 years, which shows the increasing welfare of the community. In 1890 there were, however, less deaths per thousand inhabitants from pneumonia than in 1900, but there was a decided decrease in the number of deaths from consumption. The three diseases which cause the most death are pneumonia, consumption and heart disease, and in the order named. S. S. Burt (Med. Rec., Mch. 8, 1902) believes that since there is no specific treatment for pneumonia, and since the mortality-rate has not been materially affected by the various means that have been tried during the last fifty years, attention should be more generally and carefully paid to prophylaxis. Pneumonia is an infectious disease communicable chiefly by means of the sputum, and in the same manner as tuberculosis; although it is not so contagious as are many other infectious diseases, the sanitation of our houses, schools, shops, factories, places of business and amusement undoubtedly determines to a great extent the vulnerability of the human system to it. Neglect of the ordinary laws of health is responsible for many cases of pneumonia. Among personal measures suggested for the prevention of this disease, he recommends the avoidance of undue exposure to inclement weather and of all crowded and ill-ventilated gatherings; temperance in eating and drinking; daily bathing, regular exercise in the open air with special reference to complete respiration. There is nothing better to fortify the system against infectious diseases than systematic deep breathing while briskly walking out-of-doors. Frequent changes of underclothing are desirable. Linen network underwear is conducive to a marked freedom from acute nasopharyngeal and bronchial catarrhs. The mouth should be rinsed three or four times a day with a solution of formaldehyde in the strength of twenty drops to a pint of water.

The Consequences of Syphilis.—A valuable statistical article on the relation of syphilis to subsequent disease has for its author M. M. ATTHES (Münch. med. Woch., Feb. 11 and 18, 1902) who utilized the material of the Jena Clinic, a careful record of which has been kept since the year 1860. Of 568 secondary cases, 150 had died up to the end of 1900; of 130 tertiary cases, 52 were no longer living. The most frequent cause of death in the former class was found to be tuberculosis, for no less than 24 per cent. succumbed to this disease; of the latter only 7 were affected which must, however, be ascribed to the difference in age, those tertiarily infected being generally in more advanced years when tuberculosis does not claim so many victims. No influence, one way or the other, of syphilis on mortality from tuberculosis could be found, since in those not specifically tainted an equally high death-rate exists. Diseases of the circulatory organs are next in frequency; unfortunately no reliable statistics could be discovered for comparison and the figures 3.5 per cent. and 8.4 per cent., respectively, may be no higher for syphilitics than for non-syphilitics, though undoubtedly a number of the apoplexies must be attributed to this infection. The cases of carcinoma were too few to permit of any conclusions. By far the greatest interest was offered by the diseases of the nervous system. The following figures were obtained: Tabes, 7; paresis, 8; luetic myelitis, 1; lues cerebri, 2; making a total of only 2.0 per cent. in which nervous diseases were the cause of death. Besides these there were 2 fatal cases of mania and paranoia, 2 of bulbar paralysis and 2 of meningitis. It is thus seen that the involvement of the nervous system is not so great as is generally asserted. The question whether syphilis shortens life must be answered in the affirmative since the average age of the deceased was below the normal. This does not, however, exclude the possibility of an advanced age despite infection, as several examples show.

A New Lung Test.—The uncertainty of most methods in vogue for testing whether an infant was stillborn is pointed out by D. PLACZEK (Münch. med. Woch., Feb. 18, 1902). The following method is recommended by him, since it is based upon a correct physical principle: An incision is made from the chin to the xiphoid appendix. The trachea is then ligated, the skin and muscle carefully dissected off the ribs and a special trocar and cannula, with an air-tight connection and a mercurial manometer, introduced into the pleural cavity through one of the intercostal spaces, preferably the third, fourth or fifth, between the axillary and mammillary lines. The negative pressure which developed in the chest with the first respiratory movements will then show itself on the column of mercury, while if the child had never breathed, the level will be undisturbed. The author has convinced himself of the reliability of the method in many cases, but recommends an extensive trial to decide if accumulations of fluid in the pleura or putrefactive processes impair its value. An advantage of the method is that it still permits of the floating test in case it is desirable to try this also.

Embolism of the Superior Mesenteric Artery.—Notwithstanding Deckart's careful analysis of all reported cases of embolism of the superior mesenteric artery the clinical picture of the condition remains somewhat dark. Hence a full description of a recent case is given by R. SIEVERS (Berl. klin. Woch., Mch. 3, 1902). The patient was a woman of fifty-six years who had an aneurism of the descending aorta. She was seized suddenly with sharp pain and experienced marked weakness. The abdomen was slightly distended and generally tender. The patient had some nausea and vomited slightly. There was marked tenesmus, but no passage of either blood or feces. Temperature was normal, pulse weak and irregular. Slight ascites could be made out. An enema was followed by the discharge of a few small scybalous masses. The pulse remained weak in spite of subcutaneous stimulation. The pain and abdominal distention increased and death ensued twenty-nine hours after the onset of the symptoms. Autopsy showed an embolus six centimeters long in the superior mesenteric artery close to its aortic origin.

Specific Medication.—If all diseases could be placed upon such a scientific basis that their exact causes could be determined and specific drugs employed to treat them, the art of medicine would be greatly simplified. Such ideal conditions are, to be sure, being striven for, but after all these centuries the specific remedies can be easily numbered on the fingers. A. H. SMITH (Med. Rec., Mch. 15, 1902) believes that much depends upon the clinician who may with carefully conducted experiments discover remedies which may justly be called specifics. In the treatment of pneumonia he has had excellent results from the use of salicylic acid and creosote. He believes that the latter drug in the treatment of acute pulmonary affections is "one of the greatest life-saving discoveries of the century just past." It may be given in quantities of two or three drams or more a day without the slightest inconvenience and continued until all disposition to rise of temperature has passed. It will usually bring about a lysis beginning about twenty-four hours after the administration of the first dose. In the treatment of influenza and scarlet fever carbolic acid internally and in large doses has been strongly advised, but sufficient evidence has not yet been deduced in regard to its action to determine its efficacy. It seems to have no ill-effect upon the kidneys even though carboluria is maintained for some time.

Relation of Varicella to Variola.—Although in the past the identity of these two diseases has been urged by such men as Hebra and Kaposi, it would at the present day appear an act of supererogation to attempt to prove their non-identity. The report by J. F. SCHAMBERG (Phil. Med. Jour., Mch. 8, 1902) of an outbreak of varicella among children convalescent from smallpox is of interest in this connection. A child suffering from chickenpox had been admitted to a smallpox ward with an erroneous diagnosis of variola. The true character of the disease was recognized and the child vaccinated. This patient did not contract smallpox, but succeeded in transmitting varicella to a number of other children in the ward, and these in turn to some newly-admitted, a total of thirty-three. The children were exposed during the eruptive period and the chickenpox did not appear until after the variolous rashes had crusted or were disappearing. In only one case could the two diseases be considered as existing simultaneously. As a differential diagnosis is often difficult all suspicious chickenpox cases sent to a smallpox hospital should be vaccinated.

Habitual Constipation.—This condition, with its attending evils, is one of the most frequent ailments which the physician is called upon to treat. Sedentary life is responsible for a large part of it. W. L. CALLAWAY (N. Y. Med. Jour., Mch. 8, 1902) insists that, for success, one must first obtain the confidence and willingness of the patient to carry out methodically and devotedly his or her part of the treatment. Nothing should be allowed to interfere with a regular time for going to stool, preferably just after breakfast. The diet should usually contain a restriction in the amount of meats, an increase in that of the coarser vegetables and fruits, a limitation in the use of coffee and tea, an increase of pure water (especially before breakfast), a minimum of sweets and pastries, and the food selected must be well masticated. Out-door exercise is very desirable, but, when impossible, ten to fifteen minutes of in-door exercise may be profitably substituted. Some medicine may be necessary at the beginning and the following pill is very useful:

℞ Aloin	gr. ⅕-½
Ext. belladonna	gr. 1/16-⅛
Strych. sulph	gr. 1/120-1/60
Ext. cascara sagrada	gr. ½-1

M. ft. pil.

Podophyllum resin, gr. 1/16-¼, may be added if there be hepatic torpor. If the appetite need stimulation the following is a favorite prescription:

℞ Tinct. nux vom	ʒiss.
Liq. pot. arsenitis	ʒi
Ext. cascar. sagrad. flu	℥i
Essence pepsin q.s. ad	℥iij

M. et Sig.: One dram, t.i.d.p.c., in half a glass of water. Gradually diminish dose.

GENITO-URINARY AND SKIN DISEASES.

Eczema in the Newborn.—Among the cutaneous diseases which attack children under two years of age, eczema leads all, writes Quillier (L'Obstétrique, Jan., 1902). It is as common in children as in the adult, but seems to have certain peculiarities in the former. Its clinical aspect, etiology and treatment have special significance. The diagnosis of eczema is generally easy as it is difficult to confound it with pustular eruptions such as impetigo or echthyma, or with the papular eruptions, such as prurigo, but easily with certain other cutaneous manifestations, such as psoriasis, pityriasis rosea, erysipelas or the various erythemata. Still more would it be likely to be confounded with herpes and sudamnion. It might easily be mistaken for dermatitis exfoliativa of the newborn. But eczema is rarely so general in its distribution and the prognosis is much less grave, for dermatitis exfoliativa is often fatal in the debilitated infants, poorly nourished and placed in bad hygienic surroundings. Eczema is more often chronic and accompanied by secondary complications without immediate gravity, the gravity being dependent upon that which produced the lesion. The clinical manifestations do not offer anything which is very different from those in the adult, but the etiological conditions which determine or favor its appearance are peculiar and merit study. They are as follows: Dentition, poor alimentation, parasitic, neuro-arthritic, and digestive disturbances. Unna in 1890 first advanced the parasitic theory, but the experiences of later investigators have not corroborated his observation. From the time of Hippocrates, divers maladies of childhood have been blamed upon the influence of dentition, so that one is not astonished that this should be given as one of the etiologic factors in this disease. The author believes that the only way that it could play any part is in the fact that it is usually connected with the time of digestive disturbances. In regard to the point of an hereditary neuro-arthritic origin of the disease, in spite of the fact that certain of these children have eczema, the author thinks it best to put these cases down to poor alimentation, defective digestion or bad hygiene. The newborn enjoy a special privilege of having constitutional troubles manifest themselves very late. The author holds that without any reasonable doubt eczema in children under two years of age is due to malnutrition from vices in feeding; that if a child's digestive organs functionate in a normal healthy manner no eczema will be present. The treatment is threefold—prophylactic, general and local. The mother should watch her own diet and the child should be fed regularly. Local treatment is very simple. The affected surface may be washed off with soap and water or boric acid and an ointment of vaseline with zinc oxide and sulphur applied. Inert powders, such as talcum, bismuth subnitrate give good results.

Protargol in Gonorrhea.—It is still very largely a matter of debate whether the newer methods of treatment in acute gonorrhea have added anything of really permanent value to the armamentarium. One of these methods, namely, the daily injection of antiseptic solutions into the urethra, has been tested by Wolbarst (Jour. Cut. and Gen.-Urin. Dis., Dec., 1901) in over 1,100 dispensary cases. The drug employed was protargol, in a 1-per-cent. solution. A small syringeful was injected once daily and held in the urethra for from five to ten minutes by tightly compressing the lips of the meatus with the fingers. These injections were used from the very beginning of the attack, except in a few cases in which the tenderness of the parts rendered the use of the syringe intolerable. The treatment was continued until the urine contained only shreds, *i. e.*, about three or four weeks. If involvement of the posterior urethra occurred, the injections of protargol were immediately suspended, and the entire urethral canal was daily irrigated by the Janet method with some weak antiseptic solution. The results seem to have been highly satisfactory. In the great majority of cases, the discharge was markedly and quickly diminished. The typical gonorrheal pus was reduced in almost every case to a slight watery discharge in from seven to ten days, which is certainly a positive advance over the results secured by older methods. The mucopurulent or watery discharge which could still be milked from the urethra usually disappeared wholly after from two to four weeks' treatment. Not only are the secretions diminished, but the entire course of the disease is marked by a diminution in the pain and discomfort usually experienced. The gonococci disappear after from two to sixteen days, but are apt to reappear if the use of the protargol be discontinued after less than three weeks. The complications of the disease, including involvement of the posterior urethra, which are really far more to be dreaded than is the acute anterior gonorrhea of the onset, seem to be less frequent with this method of treatment. The average duration of treatment does not appear to be shortened. In the anterior cases it is as much as six weeks, though the author believes that in private practice, with the use of these injections daily (!), this period might be shortened. The accomplishment of absolute cure is no more feasible by this than by any other method of treatment.

Elephantiasis.—Elephantiasis of the external genital organs not the result of its usual cause, the filaria sanguinis hominis, is certainly rare. It is obvious that it may follow any obstruction of the inguinal lymphatics, and that it does not more commonly follow the removal of the inguinal glands is probably to be attributed to the fact that all the glands are very rarely removed. The question of treatment is difficult. Some improvement follows the removal of much of the hypertrophied tissue, but in many cases as the lymphatic obstruction continues there is a great tendency to a reformation of the trouble. J. P. Zum Bush (Lancet, Mch. 8, 1902) reports two cases in which elephantiasis of the sexual organs followed removal of the inguinal glands. While this must be a great rarity, it is certainly a matter of considerable importance and one which should be borne in mind.

PATHOLOGY.

Test for Albumin.—A simple test for albumin in the urine is suggested by F. C. FUHS (Med. Rec., Mch. 8, 1902). Equal parts of carbolic acid and glycerin are used and an equal quantity of urine is added. The mixture is then shaken and an emulsion formed. If there is any albumin present in the urine a turbidity appears which, it is said, is always due to the albumin and will not be formed by the presence of any other excrementory substance. The test is very sensitive, for 0.1 per cent. of albumin can easily be detected. Glycerin is used to prevent the formation of a permanent emulsion between the carbolic acid and the watery elements of the urine and is added in excess to prevent any possible error.

A New Classification of Tumors.—As knowledge progresses, changes in the classifications of medicine are made so that they shall conform more reasonably with the findings of advanced learning. Tumors have deserved and received a great deal of attention, and the newly-acquired information has led to a rearrangement of these diseases into the following classes, as stated by C. P. WHITE (Lancet, Feb. 15, 1902): (A) Organomata or organ tumors; teratoma (dermoid cyst). (B) Histiomata or tissue tumors: (*a*) Connective tissue tumors (desmonata); fibrous tissue, fibroma; fat, lipoma; mucous tissue, myxoma; notochordal tissue, chordoma (of Ribbert); cartilage, chondroma; bone, osteoma; and neuroglia, glioma. (*b*) Lymphoid tissue tumors (lymphomata); lymphadenoid tissue, lymphadenoma (lymphoma); and bone-marrow, myeloma. (*c*) Muscle tumors (myomata); smooth muscle, leiomyoma; and striated muscle, rhabdomyoma. (*d*) Nerve-tissue tumors (neuromata); medullated nerve-tissue, myelinic neuroma; and non-medullated nerve-tissue, amelinic neuroma. (*e*) Epithelial tissue tumors (epitheliomata); squamous epithelium, squamous adenoma and squamous papilloma; columnar epithelium, columnar adenoma and columnar papilloma; spheroidal epithelium, spheroidal adenoma; and endothelium, angioma and endothelial papilloma. (C) Cytomata of cell tumors: (*a*) Tumors of indifferent cells (blastomata). (*b*) Tumors of connective tissue cells, also of lymphoid tissue cells and muscle cells (sarcomata); (1) pure sarcomata; round cells, round-celled sarcoma; spindle cells, spindled-celled sarcoma; and giant cells, giant-celled sarcoma; (2) compound sarcomata; fibrous tissue cells, fibrosarcoma; cartilage cells, chondrosarcoma, etc. (*c*) Tumors of epithelial cells (carcinomata); squamous cells, squamous carcinoma; columnar cells, columnar carcinoma; spheroidal cells, spheroidal carcinoma; and endothelial cells, endothelial carcinoma. From the above scheme a definition is deducible, namely, a tumor is a mass of cells, tissues, or organs resembling those normally present in the body, but arranged atypically, growing at the expense of the body without at the same time subserving any useful purpose therein. It will be seen that the distinguishing peculiarity of tumors is, therefore, that they are atypical, not in structure, but in the arrangement of their component parts. Tumors are as above, thus classified by analytical methods. The opposite process of synthesis should be tried. First, there are progressive hypertrophies of organs resembling tumors. Examples are in the prostate, breast, spleen, thyroid gland, bones, and possibly the lymphatic glands. Secondly, there are certain cases in which the whole of one tissue, usually the connective tissue, hypertrophies. Examples are the progressive fibrosis of nerves, prostate, liver, etc. Again there are cases of progressive hyperergia or progressive increase of function. Examples are the kidneys, in diabetes insipidus, in the leucocyte-forming organs, in leucocythemia, perhaps also in the thyroid gland, in Graves' disease, and in many nervous diseases. Fourth, there are cases of progressive metaplasia, as, for example, in myositis ossificans. All these processes resemble more or less tumor formation. Bearing in mind the foregoing facts it is possible to draw the following conclusions quite definitely. Every kind of tissue in the body has its representative tissue tumor. Every kind of cell with the exception of nerve cells has its representative cell tumor. Cell tumors of nerve cells have not yet been described, but muscle-cells are represented by myosarcoma, cartilage cells by chondrosarcoma, and the different kind of epithelial cells by the different kinds of carcinoma. Tumor formation is not an isolated process, but must be considered in its relation with other closely allied processes.

THERAPEUTIC HINTS.

Abortion in the Vomiting of Pregnancy.—Three stages of irrepressible vomiting are recognized by P. Dubois, as follows: First stage; vomiting is frequent and may be excited by small quantities of food or drink. There is an insurmountable disgust for food. The dejections are composed of mucus or glairy matter, bile or food. They are generally acid and may be streaked with blood. Soon appear emaciation, debility and other signs of insufficient nutrition. There is no fever, unless a slight evening rise, and there may be slight sweating during the night. Second stage: attacks of vomiting are more frequent and more violent; emaciation is increased; pulse is 100 to 140, and there is fever. The mouth is dry, the thirst intense and the odor of the breath of an acid, fetid, very striking character. Third stage; the attacks of vomiting become less severe or cease, but the fever persists with a pulse of 120 to 140. Attacks of syncope and cerebral symptoms soon come on. There are neuralgic pains, disordered sight and hearing, hallucinations, delirium and, finally, coma and death. In the first stage there is still hope of recovery from drugs or local measures; in the last stage, abortion does not save the patient and tends to hasten the end. Therefore it is in the second stage that abortion is advised if all medication, gynecological treatment and rectal alimentation have failed—in other words, when almost incessant vomiting is produced by all kinds of food and even by water, and there is great debility with or without syncope, continued fever, rapid pulse, great thirst, dry tongue, fetid or putrid breath.—J. G. CECIL in Louisville Jour. of Med. and Surg., Mch., 1902.

Chilblains.—

℞	Acidi carbolici		0.25
	Spt. camphoræ		
	Tinct. opii	aa.	5.0
	Alcohol		
	Aquæ	aa.	10.0

M. Use as a lotion. Or:

℞	Terebinth de Venice		2.0	(ʒss)
	Menthol		0.1	(gr. ij)
	Ext. hyoscyami			
	Ext. opii	aa.	0.15	(gr. iij)
	Ac. hydrochlor.		2.0	(ʒss)
	Lanolin		10.	(ʒiiss)
	Vaselin		30.	(℥i)

M. Use as salve.

Sulphur Waters in Syphilis.—The conclusions from an extended experience in the use of these waters at Luchon by FERRAS (Le Progrès Médical, Mch. 1, 1902) are as follows: (1) The sodium sulphur waters are a valuable adjuvant to mercury in all stages of syphilis. (2) They improve nutrition in the body of the syphilitic, which is always lacking in mineral constituents. (3) They favor toleration of mercury in large doses.

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Subscription Price, including postage in U. S. and Canada

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LEA BROTHERS & CO.,
No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK.

SATURDAY, APRIL 12, 1902.

PARAMETRITIS POSTERIOR IN A NEW LIGHT.

THEORIES in all sciences are formulated and live or die according to the facts which time summons to support or to disprove them. Such as survive the ordeal become the mile-posts of progress and in this satisfactory condition modern medicine finds itself.

Parametritis posterior has been a difficult problem to solve since the days when it was recognized as a distinct entity. The new light in which this disease is presented is that of a primary intestinal condition, which by spreading outward into the pelvis involves first one and then another contiguous viscus until the typical, classical picture of adhesions with displacements is presented. Late in 1901 E. Kehrer (*Ctlbt. f. Gyn.*, 1901, No. 52) presented a novel scheme for slowly breaking down these adhesions by means of balloons passed into the rectum, so placed as to be opposite the sacro-uterine ligaments and, when filled with air, gradually to stretch these and other bands binding the organs down. A. Mueller, in the same periodical, No. 9, for 1902, takes up the question in its relation to the intestine as the point at which the disease originates. The points he makes are scientifically presented and certainly are worthy of careful consideration, because, if true, they lead to a revision of our conceptions of the pathology and treatment of this all-too-common affliction among women.

The relation between obstipation and disease of the sexual organs in women has been known since long ago, together with the complications which the one brings into the clinical picture of the other. It is seldom, if ever, that an author has even suggested remotely that the exciting cause, such as small abscesses, adhesions, purulent inflammation of the mucous membrane, may have been primarily within the cavity of the intestine itself. The usual supposition is that the pelvic trouble causes atony of the intestine rather than that the intestine leads to some of the diseases of women. Mueller claims that, through many operations upon women for these pelvic inflammations, he has been surprised to find that the uterus itself was healthy, while behind it, on the contrary, were adhesions, perhaps abscesses, and other conditions, which united the organ and its adnexa to the rectum. Careful inquiry of such patients has drawn forth the truth that the obstipation commenced in the early days of youth or even childhood, and was followed by pain in the back, occasional sciatica, and similar troubles. Such cases led him to examine very carefully all patients suffering with pain behind the uterus as to the condition of the intestine as far up the descending colon as possible.

Such histories and such examinations brought him to the standpoint that a large percentage of non-gonorrheal pelvic troubles, chronic or acute, are caused entirely and primarily by intestinal affections, and that even the gonorrheal inflammations, which during their course may reach the intestine, are often increased or protracted by affections of this viscus. In his careful histories he finds facts such as these: The mother will admit having had a distinct constipation in childhood, which was accompanied later, during its continuance, with pain in the lower part of the trunk, especially at stool, later by weakness of the intestine. Weak back with inability to remain seated upon ordinary school-benches without pain over the sacrum was the next step. When menstruation appeared it was usually painful, irregular, either too scanty or too copious. Bodily activity, like gymnastics, cycling, and the duties of a housewife usually cure lower grades of the trouble. Sometimes the first childbirth will massage and stretch out the parts so that dysmenorrhea and the sacral pain will disappear.

Oftener, however, the lesions attending childbirth will add to the difficulty, so that many women are apt to date their troubles from this act.

Such being the histories the probable process within the bowel has been about as follows: Small ulcers of the mucous membrane, enlargements of the follicles, and occasionally small, submucous abscesses form with the progress of the process; the peritoneum may become involved in local inflammation and adhesions form between the bowel and the wall of the pelvis or the neighboring organs. These bands may break or persist. If the inflammation be situated where there is no peritoneum, the process extends into the extraperitoneal connective tissue, reaching especially the uterosacral ligaments. At precisely this part of the rectum the arrangement predisposes to accumulation of feces because of a bend in the bowel. Thus a vicious circle is established. The inflammation, without, gradually tightens these ligaments, while the accumulation, within, feeds the primary inflammation and makes an ascension of the process possible. The fecal impaction is of course increased by both the narrowing without and the low grade of inflammation within and finally causes atony of the bowel. If the process extend, the uterus finally may be reached; first, the uterine body, then the cervix, thus causing, in virgins, pathological anteflexion, with catarrh and dysmenorrhea. If it be possible to free these adhesions, the dysmenorrhea usually disappears. Progress posteriorly involves the periosteum of the sacrum together with the nerves and their surrounding tissues, thus causing coccygodynia, sciatica, and occasionally other nervous disorders. Retropositions and versions may in the same way be caused by adhesions which may be higher toward the fundus of the uterus, thus pulling that portion of the uterus backward; whereas, by being lower and pulling the cervix backward the anterior displacements are produced. Involvement of the sympathetic nerves would cause the reflex disturbance of the stomach, general malaise, pain in the epigastrium, pressure and similar symptoms, and during pregnancy may cause vomiting of serious form. If there be added any acute condition to these low grade, chronic processes, abscesses may occur which occasionally may rupture into the diseased bowel and by the passage of blood and pus attract the attention of the patient. The slow upward spread of the disease into the colon produces chronic catarrhal colitis. The progress of the disease downward leads to metritis, salpingitis, oöphoritis and analogous conditions.

The diagnosis of the intestinal condition as the source of these troubles is not an easy one to make, because it is out of reach of the finger and because if lower down it is usually ascribed to hemorrhoids. Mueller's method is to employ sounds which after a little practice can be introduced high up into the descending colon without causing the patient any pain. He finds that when the rectum has undoubtedly been the source of the trouble primarily or in itself an important factor in increasing or prolonging the conditions, there is a painful area to pass which is usually difficult. Again, above this in severe cases are numerous more or less tender points.

Such, then, is the very suggestive and at the same time highly important picture which the author draws of this vexatious condition, based largely upon careful history-taking and equally minute examination. Whether or not subsequent researches will bear out the idea that in a certain number of cases the intestine may be the origin of the trouble remains to be seen. The suggestion, however, is timely and potent that when we contemplate the proximity of the organs of the pelvis in women, we also realize that the condition of parametritis posterior may perfectly well originate in any one of these organs through sympathy or by direct contact and slowly involve the others. As the means, therefore, of avoiding possible needless laparotomies which may reveal little or nothing to justify them, it will be well to go over patients afflicted with this disease from the standpoint of the bowel, so as to see whether treatment of it or treatment through it may not relieve some or all of the symptoms.

CYTODIAGNOSIS, CRYOSCOPY AND HEMATOLYSIS.

So comparatively new are these terms that to many practitioners not intimately associated with laboratory labors they can suggest little save, perhaps, a desire to know their import. Inasmuch as they refer to work trending in lines which must be of interest to all—the clinical diagnosis of disease—a review of their present usefulness, of their limitations and of the hopes of those who are best acquainted with these new helps to diagnosis must be welcome.

It has for many years seemed that definite information should be obtainable as to the pathology of diseased serous surfaces by some form of examination of the fluids removed from the cavities which they line. The great worth of the typhoidal serum as a diagnostic agent, as worked out by Widal, added fuel to the hopes that in hydrocele, articular and kindred sera there might be some unknown compounds invariably and early present, capable, by some simple test, of picturing, as it were, the conditions which had called them into being.

Cytodiagnosis, an effort to show that typal cells are constantly typical of certain effusions, was worked upon by Korczynski. Wernicke and Winiarski as long ago as 1896. Widal and Ravaut contributed widely to this topic in 1900 and the results of their efforts have led indirectly to conclusions which seem to be of great value.

Cryoscopy is the process by which Castaigne in 1900 tried to establish a constant relation between the freezing-point of an exudate and its clinical evolution.

In 1901 M. Bard of Geneva, while carrying on research in these lines, made interesting observations on the effect of certain extravasation fluids on the red blood-cells. This, the latest observed characteristic, has been called hematolysis and is supposed to be due to the presence of certain indefinite bodies, the so-called lysins.

A paper which very fully discusses these three possible aids to diagnosis appeared in the *Revue de Chirurgie* for February, by Charles Julliard of the University of Geneva, and is a precursor of a larger thesis soon to be published.

Although these topics have been discussed previously in the editorial columns of the MEDICAL NEWS (Jan. 26, 1901) the conclusions reached by Julliard seem so trenchant as to warrant further discussion. This latter report touches more particularly on the so-called surgical effusions of the tunica vaginalis; of the varied articular effusions, and of those which take place into the strangulated hernial sac. Exudates of the pleura, of the meninges, and of the peritoneum will be covered in a later paper.

Cytological examination of fluids from these three sources furnishes valuable clinical material. The cellular content is a direct indication of the reaction existing between the surface and the irritating medium; this may be either infectious, toxic or traumatic; it has to do with the *degree* of injury rather than with its *nature*. Hence it is necessary in making use of cytodiagnosis not alone to take into careful account the finest clinical symptoms, but also to weigh such trifling matters as puncture, external applications, etc., as these exercise as profound changes in the cell-count and character as do the graver and more apparent factors.

It is very unfortunate for diagnostic purposes that tuberculosis of the cavities under consideration, while presenting very constant cytologic conditions—absence of endothelial cells and increase of lymphocytes—seems as yet hopelessly confused, in that tuberculous infection *anywhere* in the body will give these characteristic signs. In a lesser degree, generalized infectious diseases have an influence on the cell distribution in serous cavities which fill during their course.

The different grades of intensity of morbid processes, passing from the normal on, are characterized by the appearance, first, of endothelial cells; second, of lymphocytes, and, third, of polynuclear cells. Eosinophiles seem to have no special diagnostic significance.

The following conditions are characterized by cellular contents almost exclusively endothelial, or by an absence of all cells: (1) Very chronic extravasation; (2) those of a purely mechanical origin. We may classify those exudates yielding a majority of lymphocytes as due chiefly to infection by tuberculosis; those in which polynuclear cells predominate either to acute conditions or to severe exacerbations of chronic cases.

At present cryoscopy is not sufficiently far advanced to furnish any data either of diagnostic or of prognostic value.

Hematolysis in its present status shows that in certain exudates there exist lysins the increase in power of which seems to keep pace with morbid processes. In intra-articular effusions of infectious nature, particularly when acute, these lysins are always present.

These last conclusions are, however, so vague that as yet they have virtually no value to the clinical diagnostician. Not so, however, with cytodiagnosis, which is already taking its place alongside of kindred tests, and so confident have we grown of the power of mind to wrest a tangible something from the seeming intangible, that it is a natural supposition that cryoscopy and hematolysis, although lacking in practical value in the conditions here discussed, may act as stepping-stones along the path to more concrete and absolute knowledge.

NOMA AND INFECTIOUS ASSOCIATIONS.

THE more carefully investigations are made and the more cases properly studied the surer becomes the conclusion that noma, in its specific sense of gangrenous stomatitis, is in many cases directly due to the presence of the diphtheria bacillus in the buccal tissues of a run-down child. The lack of resistive vitality in the patient is an indispensable predisposition. It is usually brought about by an especially severe attack of measles in a delicate child, but it may be a sequela of almost any of the infectious diseases, such as scarlatina, typhoid and typhus fevers, whooping-cough, when local injuries to buccal tissues during the straining cough are thought to have an influence, and even non-specific diarrhea. In a certain number of cases noma appears to develop spontaneously or follows ulcerative stomatitis in cases in which there is no general infection. In these cases the patients have always been seriously weakened beforehand by unhygienic surroundings and by lack of proper food and care.

The original discovery that certain cases at least of noma were due to the diphtheria bacillus has usually been attributed to two foreign observers, Freymouth and Petruschky. A recent editorial in the *Journal of the American Medical Association* (Feb. 1, 1902) makes it clear that two American observers, Bishop and Ryan, in a communication to the Chicago Pathological Society in 1895, more than three years before Freymouth and Petruschky's observations were published, suggested, as the result of finding a micro-organism resembling the diphtheria bacillus in cases of noma, that this might be the causative factor of the disease, though they did not affirm it absolutely. Priority of discovery, then, is certainly on this side of the Atlantic.

Within the last few years a number of cases of noma have been reported in America in which careful investigation has shown the diphtheria bacillus to be present. Dr. Joseph Walsh reported eight such cases before the Philadelphia Pathological Society in February, 1901. In five of his cases noma followed measles; in one it occurred after diphtheria; in two cases the gangrenous stomatitis developed spontaneously. All of the cases showed the presence of the diphtheria bacillus. More than a dozen cases of ulcerative stomatitis in the same observer's hands failed to show any trace of the diphtheria bacillus.

Recently in the *American Journal of the Medical Sciences* (February, 1902) Dr. Sailer reported from Dr. Musser's and Dr. Griffith's clinics two cases of noma complicating typhoid fever. The patients were brother and sister who had been living under extremely unhygienic conditions. Cultures from the necrotic areas in both cases showed the presence of the diphtheria bacillus. Both patients improved under the administration of large doses of diphtheria antitoxin, although one of them eventually died from exhaustion.

Other American observations show, however, that even epidemics of noma may occur without the diphtheria bacillus being present. In the *American Journal of the Medical Sciences* for November, 1901, Drs. Blumer and MacFarlane reported an epidemic of noma from an Albany hospital. From over a dozen cases cultures were made, but the only micro-organisms that grew were ordinary pus cocci, streptococci and staphylococci and very frequently the colon bacillus. In slides made from scrapings there was almost constantly found a long thread-like organism of the leptothrix type. This was never observed branched. This leptothrix would not grow on any of the ordinary laboratory culture-media. It was evidently not an ordinary mouth organism, since it was found also in scrapings from cases of noma of the genitalia.

It seems evident, then, that noma is due to the association of virulent microbes of several types in run-down children. It seems probable that in most cases diphtheria antitoxin should be used in its treatment and especially if there have been any preceding symptoms of sore throat even of mild character. Noma is probably not a specific affection, however, and in all cases in which stomatitis develops in the course of continued fever of any kind or infectious diseases in delicate children, careful washing of the mouth with some mild antiseptic wash should uniformly be prescribed by the medical attendant. It is often forgotten that in health the teeth and gums are naturally cleansed by the chewing process. When liquid food becomes the sole article of diet this natural prophylactic against the accumulation of septic material in the mouth ceases to be active. Other precautions to replace it must therefore be instituted. Scrupulous care of the teeth and gums in health and disease is a serious hygienic regulation rather than a cosmetic luxury and as such must be kept constantly before the physician's mind in dealing with patients who from their age or circumstances in life are liable to be careless in the matter.

Malpractice Suit Dismissed.—Justice Leaventritt has dismissed the suit against Drs. Austin Flint and Allen Fitch for confining a patient in the Long Island Home.

ECHOES AND NEWS.

NEW YORK.

Academy of Medicine.—The following physicians have been recommended to resident fellowship: Drs. W. N. Berkeley, W. A. Downes, P. M. Townsend.

Prevention of Tuberculosis.—The second German edition of Dr. Knopf's International Prize Essay is just to hand. This essay has been translated into some twenty or more languages and over three hundred thousand copies have been disseminated.

Hospitals May Have to Close.—The hospitals at Jamaica and Flushing, L. I., will have to close within a few weeks, it is feared, unless the city comes to their aid. Both are now dependent on money raised by subscription and by entertainments. This state of affairs has lasted so long that the supporters are becoming tired, and there is not a good response to the appeals for aid. The institutions formerly received appropriations from the various villages in Queens County, but consolidation cut off this source of income, and they now receive for city patients less than it costs to maintain them. St. John's Hospital, in Long Island City, is the only one that receives an appropriation in accordance with its needs. If the hospitals at Jamaica and Flushing close, St. John's will be the only hospital in the borough of Queens.

Trainor's Inebriates' Home Bill.—Governor Odell has signed Senator Trainor's bill, incorporating the Inebriates' Home of New York City. The incorporators are John P. Corrigan, Augustus G. Walls, William E. Woodard, T. Bellows Buffum, Frank Rice, John Selden Richardson and A. Campbell White. The home is not to receive public moneys, but will be maintained privately, and is authorized to receive and care for alcoholic and narcotic inebriates.

Changes in Medical Law.—The medical law of the State has been so amended that the Regents of the University of the State may, in their discretion, admit conditionally to the medical examinations in the preliminary subjects—anatomy, physiology and hygiene, and chemistry—applicants nineteen years old who meet the other requirements. Under this amendment the Regents have power to grant an allowance of one of the four years of study in a medical school to graduates of college courses, registered by them as entitled to this privilege.

Changes at Columbia University.—The forthcoming announcement of the College of Physicians and Surgeons, the medical department of Columbia University, will contain a detailed statement concerning the plan for raising the standard of admission upon which the President and Faculty have been at work for some months past. This plan has received the assent of the Trustees and will go into operation at once. Heretofore, admission to the first-year class of the College of Physicians and Surgeons has been open to any student who complied with the minimum requirements for a medical student's certificate, as these requirements are defined by the laws of the State of New York. A medical student's certificate is issued by the Regents to any applicant who presents what are known as 48 academic counts, these 48 counts being chosen from any subjects of secondary school study. The law provides, moreover, that a student who has obtained 36 of these counts may enter upon the study of medicine having one year in which to make good the 12 remaining counts. A student entering with more than 36, but less than 48 counts, has been known as a conditioned student.

The first part of the new plan at the College of Physicians and Surgeons provides that on and after July 1, 1902, no conditioned students whatever will be admitted to the first-year class. That is to say, the students who present themselves for admission in September next must have completed by that time the entire 48 counts required by law for a medical student's certificate.

A much more radical change is announced to go into effect on July 1, 1903, which will apply to the classes entering in September, 1903, and thereafter. By the terms of this part of the plan, no student will be admitted to the College of Physicians and Surgeons who has not obtained a medical student's certificate in one of two ways:

1. By having successfully completed at least one full year's course in a college or scientific school in the United States, or having pursued an equivalent course of study at some European institution, the question of the equivalence being determined by the Regents of the University of the State of New York;

2. By passing an entrance examination conducted in June of any year by the College Entrance Examination Board, or in September of any year by the Committee on Entrance Examinations of Columbia University, or in part by both of these, provided only that if a portion of the examination be taken in June of any year the entire examination must be completed not later than September of the year following.

In accordance with the plan prevailing at Columbia University, the candidate for admission to the Medical School must offer 15 points. Of this number, 10 points are prescribed as follows: English, 3; Elementary Mathematics, 3; Elementary Latin, 2; and either Elementary French or Elementary German, 2.

The remaining 5 points that are required may be chosen from any one of the following subjects: Botany, Chemistry, Drawing, Elementary French (if not offered among the 10 points required), Intermediate French, Advanced French, Elementary German (if not offered among the 10 points required), Intermediate German, Advanced German, Elementary Greek, Advanced Greek, Elementary History, Advanced History, Advanced Latin, Advanced Mathematics, Elementary Physics, Advanced Physics, Physiography, Spanish, Zoölogy.

Candidates who receive a grade of $C = \text{Fair} = 60$ to 75 per cent. in subjects amounting to not less than 12 of the 15 points offered will be admitted to the College of Physicians and Surgeons conditionally, but in every such case the conditions imposed at entrance must be removed before the student is admitted to the second year of the course.

In order to offer an inducement to candidates to present themselves for examination upon Physics and Chemistry, or either of them, it is provided that those who receive a grade of at least $B = \text{Good} = 75$ to 90 per cent. in either Physics or Chemistry, or both, may be admitted to more advanced instruction in the subject or subjects in which such grade is obtained as a substitute for the required Physics or Chemistry during the first year of the college course.

While it is the expectation of the President and Faculty that these new entrance requirements will materially reduce the number of students of medicine at Columbia, it is confidently believed that the higher standards will result in attracting the very best class of medical students to Columbia, and will pave the way for raising the standard of admission still more in the near future.

More Charity Changes.—A number of changes in the Charities Department were recently announced by Commissioner Homer Folks. Dr. Wolfram E. Dreyfus has been appointed chemist to take charge of the drug department in place of Dr. Rice, who died last May. Dr. Dreyfus is a graduate chemist of the University of Munich. He has been an assistant instructor in

Columbia University for the last two years. Miss Jane M. Pindell has been appointed superintendent of the Metropolitan Training School for Nurses on Blackwell's Island. She was formerly second assistant superintendent of the City Training School at Bellevue. The Blackwell's Island school has previously been under the supervision of the medical superintendent of the Metropolitan Hospital, a post held until a year ago by Dr. George T. Stewart, now superintendent of Bellevue. Since then Supt. William B. O'Rourke has been the nominal head. Now the school will have a superintendent of its own. A board of women managers for the school has also been established to develop and extend its work. The board will consist of seven members, the term of one expiring each year. Five have already been appointed: Mrs. W. K. Draper, Mrs. John W. Brannan, wife of the President of the Bellevue Board of Trustees; Miss Eunice Ives, Mrs. Schuyler N. Warren and Mrs. Harold de Raasloff.

An Opening for Internes in the State Hospitals.—Students about to graduate who are unable to secure positions in general hospitals, or young physicians whose terms are about to expire in general hospitals and who wish to enlarge their experience, are now offered an opportunity to enter the New York State Hospitals as internes or clinical assistants. These positions provide lodging and board. Appointments are made for a year. Some twenty-eight positions will be open in the fourteen State Hospitals situated in the following places in New York State: Utica, Buffalo, Gowanda (homeopathic), Binghamton, Kings Park, L. I., Flatbush, Brooklyn, Central Islip, L. I., Ward's Island, N. Y. City (two hospitals), Rochester, Ogdensburg, Poughkeepsie, Willard, Middletown (homeopathic).

Although these are hospitals for the insane, yet they are so large that opportunities for experience in general medicine are abundant. Each hospital is well equipped with clinico-pathological laboratory and apparatus, operating-rooms, trained nurses, hydrotherapeutic and electrical devices and good medical libraries. The field for study in general medicine is excellent and surgical operations of all kinds are frequently performed, either by resident or consulting surgeons. It is thought that many students who wish hospital experience and are unable to obtain it because of the relatively few places available in general hospitals may be glad to learn that positions of this kind have been thrown open to them. It is believed that young physicians wishing hospital experience will profit by a year's residence in one of these hospitals, and such as desire to continue in special work would be eligible for appointments subsequently to salaried positions in the same service. No examinations will be necessary, but application must be made in person, with good references, directly to the medical superintendent of any of the above named hospitals or to Dr. Frederick Peterson, President of the Commission in Lunacy, 4 West 50th Street, New York City.

PHILADELPHIA.

Vandalism in a Medical College.—During the day or night of March 31st some person made a dastardly attempt to ruin property in the library of the Jefferson Medical College, three portraits and a statue being defaced. The portraits were oil paintings of Professors J. Aiken Meigs, Samuel W. Gross, and W. W. Keen, and were cut by a knife and punched by a blunt object. None of them are irreparably injured as in each instance the face was not reached. The bronze statue was scraped by some rough instrument. There is no clue to the perpetrators, nothing whatever having transpired to direct any suspicion to the students or employees of the institution.

Dr. Keen Honored.—Dr. W. W. Keen has been paid a high tribute by being chosen the honorary president of the First Egyptian Congress of Medicine which is to meet in December of this year. He is believed to be the first American ever selected as honorary president of a foreign medical congress.

Adenomyoma of the Uterus.—At the meeting of the Obstetrical Society, April 3d, Dr. J. M. Baldy reported two cases of adenomyoma of the uterus. Dr. Thomas S. Cullen of Baltimore, who was the guest of honor at the meeting, spoke on the same subject, illustrating his remarks, especially his theory of the formation of these tumors, by lantern slides. Dr. Cullen still maintains that these tumors spring from remains of the Müllerian ducts.

Nazarene Home Declared a Nuisance.—The Board of Health has declared that the Nazarene Home for the Aged on Columbia Avenue is overcrowded and unclean and a nuisance prejudicial to the public health. Twenty days have been given in which to reduce the number of inmates and place the home in a sanitary condition or it will be closed. There are now 79 inmates, there being from 1 to 9 beds in the various rooms and some in the basement.

Practises Medicine at Age of Ninety-three.—The town of Freehold, N. J., boasts of a man who is probably the oldest practising physician in the United States, Dr. Otis R. Freeman, now in his ninety-third year. He is still active and makes visits through the surrounding country as far as sixteen miles from his home.

Smallpox Decreasing.—The number of cases of smallpox is steadily decreasing. Director of Public Safety English in his annual report says: "I believe it is absolutely necessary for the health of this community that an Act of Assembly should be passed requiring compulsory vaccination and revaccination. The time taken in the operation is so slight and the effects in the way of suffering not such as to prevent the transaction of business, that there is no good reason why every individual should not be submitted to vaccination. A public record should be kept of these vaccinations and every person should be required to be revaccinated at each recurring five years, or as often as necessity therefor shall arise." Statistics of the Municipal Hospital are given as ample and practical proof of the value of vaccination.

College of Physicians.—At the meeting of April 2d Dr. William Osler read a memoriam of the late Dr. Alfred Stillé. Dr. Osler paid a high tribute to the memory of that noted physician, speaking of his early career as a student in Paris of the great French teacher, Louis, and later of the part he played in the differentiation of typhoid from typhus fever, Drs. Gerhard and Rennock, Stillé and Shattuck being the first to really grasp the differences between the two diseases. A point emphasized was that Dr. Stillé, although he reached a ripe old age, was peculiarly free from the vagaries that so often attend that period of life. Particularly was this true in regard to opposition to things new which becomes such a passion in some old persons. Until the last Dr. Stillé was ever ready to welcome any advance or new idea that promised good to the profession.

Possible Cause of Intestinal Obstruction.—Dr. Frederick A. Packard reported a case of partial intestinal obstruction in a patient who died of carcinoma, the cause present never having been mentioned in literature to his knowledge, although he has waited eighteen months before reporting the case. The patient had about one dozen liquid stools daily, but could pass no flatus. Autopsy showed a loop of intestine in the shape of the letter "U" filled with liquid feces. This acted as a plumbers' trap and prevented the escape of gas. This was stated to be the only condition found that could cause the obstruction and although very simple in its working seems never before to have been recognized.

Operation for Perforation in Typhoid Fever.—Dr. George E. Shoemaker reported a case of perforation on the twenty-fourth day of a severe attack of typhoid fever. Operation was performed about ten hours later. The patient died on the seventh day after from general exhaustion. Dr. Shoemaker believes that this case argues for operation, as some cases will recover if operation helped this patient live six days after perforation. He would make the incision as in operating for appendicitis. Distended bowel removed from the abdomen should be opened to allow escape of gas and closed before restoring instead of inflicting trauma by endeavoring to replace distended coils. Dr. James Tyson spoke of a case of perforation operated upon. death following in twenty-four hours. The diagnosis had not been established until twenty-four hours after perforation, all signs being uncertain, except an increasing leucocytosis. He asked Dr. Osler how reliable leucocytosis was in such cases. In reply Dr. Osler stated that there was no question as to the diagnostic value of leucocytosis when present. Unfortunately, it does not always occur. When, after a low leucocyte-count during the previous part of the attack, it goes up during a suspicion of perforation it is of very great value. Dr. Osler stated that cases of perforation operated upon belong to one of three groups and should be so grouped in statistics: (1) Those cases which die directly after the operation; (2) those which recover; (3) those which recover from the shock of perforation and operation and die later from the disease itself.

CHICAGO.

A Home for the Chicago Medical Society.—At a meeting of the Physicians' Club, held March 31st, plans for a home for the medical societies of Chicago on the lines of the Academy of Medicine in New York were set forth. It was declared almost a certainty that the plan would be realized soon, and means for making the home a world center for the medical profession were discussed at length. The ultimate aim is to secure in a separate building, owned by the various organizations and located in the heart of the downtown district, laboratories for research work, libraries, lecture halls, and parlors where thousands of physicians can gather socially. As a preliminary step, the Club appointed a committee of five members to confer with the Board of Trustees of the Chicago Medical Society for the purpose of arranging plans whereby the fund already begun can be increased. The committee was also instructed to investigate different sites which are available, so that they may give a complete report within the next few weeks. The committee is made up as follows: Dr. Nicholas Senn, Dr. E. J. Doering, Dr. Joseph Zeisler, Dr. D. W. Graham, Dr. H. N. Moyer. In the meantime, the Club proposes to establish a temporary meeting-place where the organizations can perfect their plans and where enthusiasm can be stirred up until the home of the profession is established. It is proposed to furnish and occupy a hall inside the Union Loop, and to coöperate with the John Crerar Library in the collection of an extensive medical library.

Chicago Lying-in Hospital.—Gratuitous treatment has been accorded to more than a thousand poor women by the Chicago Lying-In Hospital and Dispensary during the last year, according to the annual report read at the meeting of the Board of Directors. held in the Hospital. Of this number, 939 cases were treated in the Out-Department, the patients receiving care in their own homes, and 142 were cared for at the hospital. The annual report was read by Dr. Joseph B. De Lee.

New $1,000,000 Hospital for Chicago.—Plans for a new million-dollar hospital overlooking Lincoln Park were announced at a banquet recently given by the National Medical University at Kinsley's. The banquet was tendered to the faculty and the graduates for this quarter. Dr. Julia Holmes Smith, Dean of the institution, presided. The new hospital is to be incorporated as the National Hospital and Sanitarium. A site overlooking Lincoln Park, valued at $200,000, has been selected.

To Raise Money for a Hospital.—The German-American Charity Association, an organization which devotes its time and energy toward raising money for hospitals and benevolent institutions, has raised donations amounting to $12,000. The beneficiaries are: Alexian Brothers' Hospital, The Altenheim German Hospital, St. Elizabeth's Hospital, Chicago Maternity Hospital, Home for Destitute and Crippled Children, Visiting Nurses' Association, Chicago Orphan Asylum, Chicago Relief and Aid Society.

Dr. Senn a Delegate to the International Conference of the Red Cross.—Dr. Nicholas Senn has been appointed by Secretary Hay as one of the delegates to the Seventh International Conference of the Red Cross, to be held at St. Petersburg, May 16-29, 1902.

Tri-State Medical Society.—The Tri-State Medical Society, comprising Iowa, Illinois and Missouri, met in this city April 3d and 4th. The following officers were elected for the ensuing year: President, Dr. Alexander Hugh Ferguson, Chicago; First Vice-President, Dr. Flavel B. Tiffany, Kansas City, Mo.; Second Vice-President, Dr. J. C. Sullivan, Cairo, Ill.; Secretary, Dr. W. B. La Force, Ottumwa, Iowa; Treasurer, Dr. Emory Lanphear, St. Louis, Mo. Place of meeting, Hannibal, Mo., 1903.

Clinic by Dr. Vaughan.—Dr. Victor C. Vaughan, Dean of the Medical Department of the University of Michigan, gave a medical clinic in the Laboratory Building in the Northwestern University Medical School for Dr. Arthur R. Edwards, April 9th.

Public Health Matters.—The smallpox statistics are even more satisfactory. There have been 573 cases and 118 deaths from smallpox in New York, and 106 cases and one death from the disease in Chicago. The figures speak volumes for the Department's methods in dealing with smallpox—more than five times as many cases and 118 times more deaths in New York, with less than twice the population of Chicago. "The 544 deaths recorded last week were only 9 in excess of the number of the previous week, but 115 more than in the corresponding week a year ago. Diphtheria deaths are double the number of the previous week, and four times as many as in the week of 1901. The almost epidemic prevalence of the communicable diseases of childhood has caused the Commissioner to renew his efforts to secure the coöperation of the public school teachers. Through the assistance of Superintendent E. G. Cooley, a copy of the circular, 'Suggestions for the Teaching of Cleanliness Among School Children,' is being put in the hands of every teacher, with a request from the Superintendent that they be continuously enforced. The gist of these suggestions is that much may be done to restrict the spread of contagion by teaching habits of cleanliness."

Commencement Exercises at Rush Medical College.—Rush Medical College held its quarterly commencement exercises April 4th, in the amphitheater of the Clinical Building. Twelve men received the degree of doctor of medicine. The Commencement Address was delivered by Dr. Nicholas Senn, who spoke on the life and work of the late Professor Christian Fenger. Dr. Nicholas Senn, long associated with Dr. Fenger, paid him an eloquent tribute, and among other things he said that Dr. Fenger loved surgery as a science. He despised it as a trade. He revered the teachings of the old masters, but craved for the brilliant light kindled by modern research and investigation. He was familiar with the works and deeds of the pioneers of medicine, but eagerly looked for and applied modern methods. In his dealings with his clients he was honest. He never used the knife unless he was confident that the operation would benefit his patient. Nothing could entice him from what he considered to be his duty. Money and reputation were, with him, secondary considerations. Fenger was a tireless worker. He seldom allowed himself a vacation. He found the greatest happiness in the operating-room, the morgue, laboratory and library. During his lifetime he did more for humanity and the advancement of science than any of the crowned heads of Europe. His students fairly worshipped him. His eccentricities became a source of fascination. He made the most elaborate preparations for every clinic. Although not a fluent speaker, every word he uttered betokened a profound knowledge of the subject or case under discussion. Every operation of any magnitude he performed he illustrated by colored blackboard drawings, portraying accurately the pathological conditions, surgical anatomy and technic of the operation. As a surgeon, Fenger was conscientious, painstaking and thorough. He did not operate for the sake of operating. He looked as carefully for contra- as for indications for an operation. He detested all attempts at display of manual dexterity. He operated slowly but deliberately. Every one of his operations was a careful anatomical dissection. He did not shrink from the most difficult operation if he could see a clear indication for it. He was not a specialist in surgery. The brain, the spinal cord, the contents of the abdomen and pelvis were to him familiar territories. The medical profession of Chicago respected and honored him during his lifetime; it mourns his premature death. It is an honor to die the death of a patriot on the battlefield; it is still a greater honor to die during the useful years of a great teacher, a distinguished surgeon, a recognized scientist, and, what is more than all, a benefactor of suffering humanity. Modesty was one of his greatest virtues. His childlike simplicity was charming; his magnanimity toward students and colleagues almost proverbial. As a friend, he was true and steadfast. His home was a haven of rest and peace. He had no use for clubs; his home was his clubhouse. His last operation in the clinic was a complete laryngectomy for carcinoma. His patient made a satisfactory recovery. What was the secret of his marvelous success? It was his diligence, perseverance, the hardest kind of unselfish work. From the beginning of his professional career he comprehended fully the meaning of Johnson's famous saying, "Few things are impossible to diligence and skill." His whole time and all his thoughts were devoted to his profession. He was never idle. He was a careful, critical reader, and always made extensive notes of what he read, which were classified and could be utilized whenever needed. His linguistic attainments were a great aid to him in absorbing and digesting the medical literature of the world. As a diagnostician he had no superior. He examined his cases with the utmost care, and in obscure, doubtful cases made use of all modern diagnostic resources before he made his final diagnosis. His accurate knowledge of anatomy and morbid anatomy made him a safe and successful operator. It was his diligence, his application, his honesty, his deep learning that commanded the respect and won the affection of his colleagues and riveted the attention of his students. He was the architect of his fame and success. Fenger is dead, but his example and his work will always live.

"Finally, let us say to our departed friend, esteemed colleague and beloved teacher:

"'Fare thee well! And if forever,
Still forever fare thee well.'"

CANADA.

Montreal Branch, Victorian Order of Nurses.—The annual meeting of the Montreal Branch of the Victorian Order of Nurses was held on the afternoon of Thursday, the 27th ult. This branch was shown, according to the reports, to be in a good financial condition. There are at present seven nurses in attendance. Dr. Craik was elected one of the vice-presidents and Professor Adami one of the secretaries.

Smallpox in Quebec.—Enquiry amongst doctors and others in the city of Quebec serves to corroborate the statement that there are and have been several hundred cases of smallpox in that city which had not been reported to the Health Department. The present outbreak dates from October 28th last and in that time there have been a total of 671 cases, with at any one time on the books of the Department of Health a number equivalent to 81. There have been only eight deaths owing to the extreme mildness of the disease. So light, indeed, are many of the cases, that people are said to court taking it in preference to vaccination. In the fatal cases it is stated that these suffered from some other disease in connection with the smallpox.

McGill now has a Representative in London.—Mr. J. Stuart Horner, a well-known English scientist, has been appointed by the corporation of McGill University its honorary representative in England. Recently an article was published in "The (London) Times" with respect to the excellence of the equipment of the Faculty of Applied Science at McGill and advising that English students purposing taking a course abroad in this scientific branch should go to McGill in preference to the Massachusetts School of Technology. The authorities of McGill following upon this suggestion have notified the British public that they will hold an entrance examination in London commencing on June 6th. Mr. Horner has already received several applications from English students who contemplate coming to McGill. As the corporation has also recently established a six-year course in Applied Science and Medicine, we may in the near future see English students graduating in medicine from this famous University.

Progress in Dominion Registration.—Dr. Roddick's bill to provide for a Dominion Medical Council for all Canada, it is understood, will be reported upon favorably by the special committee appointed by the House of Commons to consider its proposals. In connection with the importance of this measure to Canadian practitioners, Dr. J. A. Kennedy, writing from Nkandhla, Zululand, under date of February 20th to a local paper in Montreal, points out the great injustice which students and graduates of McGill and other Canadian universities are put to on account of their degrees being refused as equivalents for registration to practice in South Africa. As soon as Dr. Roddick's bill becomes law it will enable Canada to obtain reciprocity with the British Medical Council ,and then those disabilities will be removed.

Toronto Clinical Society.—The regular monthly meeting of this Society was held on the evening of April 3rd. Dr. K. McIlwraith reported three cases of puerpera septicema treated with the antistreptococcic serum with two recoveries. Dr. R. D. Rudolf reported an interesting case of purulent pericarditis, empyema, operation and recovery, which occured in a boy seven years of age. The empyema followed the attack of pericarditis. The case was diagnosed by means of the X-ray, two skiagraphs of which were shown by Dr. Rudolf. Over thirty-six ounces of fluid was withdrawn from the pericardial sac under operation by Dr. George A. Peters. The symptoms of cyanosis, etc., soon disappeared.

Obituaries.—Dr. William S. Muir, Truro, Nova Scotia, one of the foremost general practitioners in Canada, died in the latter part of March after a three days' illness from appendicitis. Dr. Muir was born in 1853 in Truro. The son of a doctor, he studied with his father and then entered the Halifax Medical College from which he was graduated in 1874. He served for a time in the Victoria General Hospital of that city and then went to Edinburg in 1877. He was again in Edinburg in 1879 and in London in 1891. Besides this he frequently visited Boston, New York and Philadelphia hospitals. Dr. Muir has always been prominent in medical society work. He was elected secretary of the Medical Society of Nova Scotia in 1887 and held the position until the time of his death. In 1901 he was President of the Maritime Medical Association. He has been for years a prominent figure at the annual meetings of the Canadian Medical Association, and has been local secretary and provincial vice-president for that organization. His will be a distinct loss to the Canadian Medical Association, as he was always on the more prominent committees and did a great amount of work at these metings. To know Dr. Muir was to make him a friend, and he was one of the most popular medical men in the Dominion.—Dr. E. P. Gordon died in California recently at the age of thirty-five years. He was a graduate of Toronto University, and before going to California he practiced for a time in Toronto. "Eddie" Gordon was well-known in athletics.

Canadian Association for the Prevention of Tuberculosis.—The annual convention will be held at Ottawa April 17 and 18, 1902. The following program is announced. First Session: Thursday, April 17th, at 3 P.M.; Address by the President, Sir James A. Grant, M.D., K.C.M.G.; Appointment of Committees of the Convention to consider and report upon the following and other matters: Committee No. 1.: The permanent organization of and Constitution for the Canadian Association; Committee No. 2: (*a*) The relation of Governments and Municipal Bodies to the Crusade for the Prevention of Tuberculosis; (*b*) Legislation; (*c*) Notification by Physicians of the Presence of the Disease; (*d*) Inspection of Schools and Examination of Children; (*e*) Inspections or Warnings against Dangerous Meat, Milk, etc. Committee No. 3: (*a*) The Availability of General Hospitals, Sanitoria, Seaside and Other Resorts; (*b*) The Care of Public Conveyances, (Steamships, Railway Carriages, Street Cars, etc.) to prevent the spread of the disease. Committee No. 4: The Collection and Publication of useful information for the education of the people towards securing their cooperation with the Medical Profession. Committee No. 5: Resolutions.

Second Session: Thursday Evening at 8 P.M. Address by S. A. Knopf, Esq., M.D., of New York: "The Mission of Societies for the Prevention of Consumption in the Anti-Tuberculosis Crusade."

Third Session: Friday Forenoon, at 10 A.M. This Session is to be allocated to the various committees to discuss and frame reports or resolutions to be presented at the forenoon and evening sessions of the Convention.

Fourth Session: Friday Afternoon, at 2.30 P.M. (1) Report Committee No. 1 on Organization and Constitution for the Canadian Association. Election of Officers. Report of Committee No. 2 :(*a*) The Relation of Governments and Municipal Bodies to the Crusade for the Prevention of Tuberculosis; (*b*) Legislation; (*c*) Notification by Physicians of the Presence of the Disease; (*d*) Inspection of Schools and Examination of Children; (*e*) Inspections or Warnings against Dangerous Meats, Milk, etc.

Fifth Session: Friday Evening at 8 P.M. Report of Committee No. 3: (*a*) The Availability of General Hospitals, Sanatoria, Seaside and Other Resorts; (*b*) The Care of Public Conveyances (Steamships, Railway Carriages, Street Cars, etc.) to prevent the Spread of the Disease. Report of Committee No. 4 : The Collection and Publication of useful information for the education of the people towards securing their co-operation with the medical profession.

GENERAL.

Doctors Alone Under Law.—Osteopaths, magnetic healers and Christian Scientists are not violating the law of 1901 in practising in Washington State without passing the prescribed examination in medicine and surgery and securing the license required of physicians of recognized schools. This is the statement of the law made in an opinion prepared by Assistant Attorney-General Ross. He holds that under the law only those persons are required to pass examination and secure license who actually advertise themselves as doctors, using the title "M.D.," or publicly assume to practise surgery or medicine.

Medical Society of the Missouri Valley.—This association held its semi-annual meeting, at Lincoln, on March 20th, with a large and representative attendance, and Dr. Richard C. Moore, of Omaha, President, in the chair. Chicago was represented by Drs. Moyer, Findley, and Coulter. Three sessions were held, and sixteen interesting papers read. The "Medical Herald" was again made official journal of the society. After the evening session, the members were invited to the banquet hall of the Lindel Hotel, where a sumptuous repast awaited them. The next annual meeting will be held in Sioux City, Iowa, September 18, 1902.

Gregory Banquet.—The following is the program which will be observed at the banquet to be given under the auspices of the St. Louis Medical Society of Missouri to Elisha Hall Gregory, M.D., LL.D., at the Planters Hotel, Thursday evening, April 17th, to commemorate his fiftieth anniversary as a teacher of medicine. Invocation, Most Reverend J. J. Kain, Archbishop of St. Louis; "The State and the Medical Profession," Governor Dockery; "An Organized Profession," Nicholas Senn, Chicago; "The Evolution of Surgery," DeForrest Willard, Philadelphia; "American Surgery," Charles B. Nancreade, Ann Arbor; "The Medical Press," George H. Simmons, Chicago; "Our Teacher," Surgeon-General Walter Wyman, Washington; "The Teacher in Medicine," Chancellor Chaplin, St. Louis; "The Profession in Missouri," J. D. Griffith, Kansas City; "The St. Louis Medical Society of Missouri," N. B. Carson, St. Louis; "Ethical Ideals," W. G. Moore, St. Louis; Presentation of Memorial, C. H. Hughes, St. Louis; "Our Guest," Elisha Hall Gregory; Presiding officer, A. M. Dockery, Governor of Missouri; Toastmaster, Frank J. Lutz.

American Medical Association.—The Committee on Pathologic Exhibit for the American Medical Association is anxious to secure materials for the coming session at Saratoga, June 10th to 13th inclusive. This exhibit was accorded much praise and comment during the sessions at Atlantic City and St. Paul, respectively, where were collected valuable exhibits from all parts of the country. The materials included not only pathological specimens but the allied fields, bacteriology, hematology, physiology and biology were well represented. It would also be desirable to secure exhibits of new apparatus, charts, etc., used by teachers of pathology and physiology in medical colleges. This exhibit has already become a permanent feature of the annual sessions of the American Medical Association and the Committee is desirous of securing its list of exhibits as early as possible and to this end asks those having desirable materials to communicate with any member of the Committee. To contribute to the value of the work, it is suggested that as far as possible each contributor select materials illustrative of one classification and by such specialization enhance the usefulness of the display. Those lending their materials may feel assured that good care will be given their exhibits while in the hands of the Committee and due credit will be given in the published reports.

Country Life in America for April.—"Country Life in America" for April has caught the charm of the outdoor world in spring. With large and superb illustrations, it has to do with everything from the trout streams and wild flowers of April to horses and dogs, garden-making, and the varied country pursuits of the month. A beautiful cover in colors is by Walter K. Stone, and, among the leading features, J. Horace McFarland contributes a suggestive article on the blooming of trees and shrubs; the editor, L. H. Bailey, has written the first instalment of a "Country Home-Making" series, telling where best to seek the land for large and small places; and "The Art of Formal Gardening," by J. M. Good, treats of landscape-architecture on the famous Sprague estate at Brookline, Mass.; while the editorial discussion, this month, relates to the popularity of Nature literature and photography, and their significance in the enjoyment of country life. Apropos of the camera-shot, "Hunting Rattlesnakes with a Camera," by W. H. Backus, furnishes some marvelous photographs of live "rattlers." Unusual pictures, too, are "The Cloudlands," as photographed by Otto von Bargen from the top of Mt. Tamalpais at sunrise; and then there are photographs of live gray foxes by Herbert K. Job, and "The Housekeeping of the Hummingbird" is a Nature sketch by Julian Burroughs, quaintly illustrated by the camera. The number is particularly valuable for its information and timely suggestion about gardening, floriculture, fruit-growing and kindred subjects; as well as for its "calendar" and articles that chronicle the sports and pastimes of those who love the country. The end of the first volume is celebrated with the largest number yet published, and it certainly bespeaks the splendid success that the publishers claim.

Obituary.—Dr. Delavan Bloodgood, Medical Director, U. S. N. (retired, 1893), died last week from heart disease at his home, No. 320 Clermont Avenue, Brooklyn, N. Y. He was born in Erie County, N. Y., on August 20, 1831. He was graduated from Madison University, Hamilton, N. Y., and Jefferson Medical College, Philadelphia. He entered the Navy as an assistant surgeon in 1877, and was promoted as follows: Passed assistant surgeon, 1861; surgeon, 1862; medical inspector, 1865, and medical director, 1884. His first service was on the frigate "Merrimac" on the Pacific Station. At the opening of the Civil War he was serving on the "Dacotah," in Hampton Roads. Later he was with Farragut on the "Mississippi," and afterward saw duty off the Newfoundland Banks in hunting for privateers. After the war he served on foreign stations, and for several years was fleet surgeon of the Pacific Squadron, coming home in 1879 on leave of absence. From 1886 to 1887 he was in charge of the naval hospital at the Norfolk Navy Yard. After that he took charge of the naval laboratory at the Brooklyn Navy Yard, and held that place at the time of his retirement. He was a member of the Phi Beta Kappa Society, the Holland Society and the University Club of Manhattan, and the Hamilton Club of Brooklyn.

Dr. John E. Laning, founder of the New York Medical Association, is dead in Oneonta, N. Y. He was born in Canajoharie, November 10, 1823, and during the war was an army surgeon. He was one of the oldest practising physicians in Otsego County.

Dr. John L. Eddy, for fifty years a prominent physician and surgeon of western New York, died suddenly of apoplexy at his home in Olean on Sunday morning. He retired apparently in perfect health half an hour before death came. Dr. Eddy was born in Rutland, Vt., in 1829. He served as a surgeon during the Civil War and for many years he was surgeon for the Western New York and Pennsylvania Railroad. He was President of the New York Society of Railroad Surgeons and a member of the National Association; was a thirty-second degree Mason and a member of St. John Commandery of Olean.

Dr. William Elliott Hugher, Jr., who was formerly an assistant on the surgical staff of the Johns Hopkins Hospital and later associated with Dr. Young in Baltimore, died last week of typhoid fever at Johns Hopkins Hospital. He was the son of Capt. W. E. Hugher of Charleston, S. C., and a member of one of the oldest Huguenot families in the State. He graduated at the University of Virginia and studied medicine in the Johns Hopkins medical school.

Dr. Ulick W. C. Burke died Thursday after an illness of two weeks, at his home, No. 273 Berry Street, Williamsburg, N. Y., from heart disease. He was forty years old and was a graduate of Bellevue Medical College.

CORRESPONDENCE.

THE TUBERCULIN TEST.

To the Editor of the MEDICAL NEWS:

DEAR SIR.—My attention has been called to your excellent editorial in the MEDICAL NEWS of February 8, 1902, upon the early diagnosis of pulmonary tuberculosis, in which you do me the honor of referring to my work on the diagnostic use of tuberculin. By some inadvertence, however, you quote me as opposing its use, while just the contrary is the fact. In a paper of mine published in your journal July 9, 1898, upon "The Tuberculin Test in Cervical Adenitis," I conclude as follows: "From the experience, then, in these fifty-three cases, I have decided that it is a safe procedure (the tuberculin test) and that one need not feel apprehensive in its employment. Further, I believe that it is a valuable and easy diagnostic method in many and various conditions in which a suspicion of tuberculosis exists, and would commend its use." In a subsequent paper published in the Transactions of the American Climatological Association for 1899, I again conclude, "The tuberculin test indicates early tuberculosis by a general reaction in the majority of cases before it can be detected by other methods, the X-ray excepted. The dose to accomplish this is from 5 to 10 milligrams of Koch's original tuberculin. No injurious results occur from the use of tuberculin in these doses." And, finally, in a paper published in your journal August 21, 1901, I conclude the report of a series of tuberculin tests thus: "I must confess that when a case of tuberculosis not far beyond the incipient stage (referring to one of the cases reported) with tubercle bacilli in the sputum, fails to react, one's confidence in the test is temporarily at least a little shaken, but it is well to bear in mind that in all such investigations as the above there is always a chance of error, and as yet we do not know what the minimum efficient dose is, and not unlikely it may vary for each individual. One thing I feel sure of that up to ten milligrams there is no injurious result to be feared." It is to be borne in mind that this conclusion referred only to results obtained in twenty-six cases of suspected or proved tuberculosis.

I still remain a believer in the value of the tuberculin test and am at present using it in suspected cases of pulmonary tuberculosis, submitting them at the same time to the X-ray and comparing the results. I hope in the future to report these investigations.

I may be permitted to quote the statements of two well-known gentlemen, made at the British Congress on Tuberculosis last summer in London, upon the subject of "The Value of Tuberculin in Diagnosis and Treatment." In answer to the question, "What is its value in diagnosis?" Prof. McCall Anderson said: "It is enormous, and it is a curious anomaly that, while it is recognized as a very certain test for tuberculosis in cows, it is rarely used by medical men in the case of human beings." Dr. G. A. Heron, physician to the City of London Hospital for Diseases of the Chest, Victoria Park, said: "That it rarely fails to react where there is tuberculosis is so true that cases in which failure is recorded may safely be neglected. In my own experience of this use of it (for diagnosis) I have never seen any evil consequences follow its administration." Dr. Heron, in the same discussion, referred to the work of Dr. France of the London County Asylum, Claybury. Dr. France desired to ascertain with certainty who among the insane inmates of the asylum had tuberculosis. "For this purpose he tested fifty-five of his patients with tuberculin. Characteristic reactions occurred in forty-five of these cases. Thirty-four of them eventually died and twenty-nine of these thirty-four were submitted to postmortem examination, with the result that, as Dr. France says, "Active tubercle was formed in every case." Ten of the fifty-five patients did not react. Five of these died and postmortem, says Dr. France, no trace of tubercle was found in any; five are still alive and healthy." Here is his expression of opinion in his own words: "I injected seventy-five cases with tuberculin, and personally I am satisfied, not only with the accuracy of its diagnostic power, but also with its entire harmlessness, both in the tuberculous and in the non-tuberculous."

Edward O. Otis, M.D.

381 Beacon Street, Boston, March 28, 1902.

THE PANAMA CANAL QUESTION.

To the Editor of the Medical News:

Dear Sir:—Having read the article on the "Sanitary Aspects of the Panama and Nicaragua Canals" by Dr. Soper, contained in your issue of January 4th, it has occurred to me that some precise figures might interest your readers. I therefore inclose a translation of a communication from Dr. Lacroisade, Medical Director of the New Panama Canal Company, dated Panama, March 9, 1902, in which he brings up to date the table he prepared in 1898 for a Commission from Paris then inspecting officially the works of the Canal. He appends certain notes and explanations suggested by a residence of many years on the Isthmus. The marked improvement in health since the early days of the enterprise is forcibly presented by these official hospital records. Dr. Lacroisade attributes the improvement to the better accommodations of the laborers, to better drainage, and especially to the fact that the excavations have reached a level below the poisonous emanations of decaying organic matter. The period of serious sickness, always to be expected when beginning extensive diggings in tropical regions has apparently already passed at Panama, but must be met in Nicaragua should that route be adopted.

Henry L. Abbott,
Bvt. Brig. General U. S. A., Retired.

Washington, D. C., March 25, 1902.

OFFICIAL HEALTH STATISTICS OF THE PANAMA CANAL.
By Dr. Lacroisade, Medical Director.

Years.		Effective Force Employed.	Percentage of Disease.			Percentage of Mortality.		
			Diseases of Europe.	Diseases due Climate.	Total.	Diseases of Europe.	Diseases of Climate.	Total.
Old Company.	1881	928	21.02	42.03	63.04	1.94	4.74	6.68
	1882	1,910	18.85	47.64	66.49	3.21	4.39	6.60
	1883	6,267	23.24	42.62	65.86	3.20	4.46	6.66
	1884	17,615	27.58	36.95	64.57	2.58	4.08	6.66
	1885	15,215	11.93	49.14	61.07	1.73	3.79	5.52
	1886	14,935	14.01	43.88	57.89	1.67	3.43	5.10
	1887	16,217	21.83	39.25	61.07	3.22	3.99	6.21
	1888	13,725	12.17	40.46	52.63	1.81	2.54	4.35
Means.		10,854	18.83	43.75	61.58	3.05	3.92	5.97
Receiver.	1889	1,826	....	....	....	....	....	....
	1890		....	....	....	....	....	....
	1891		....	....	....	....	....	....
	1892	about 800	....	....	....	....	....	....
	1893		....	....	....	....	....	....
	1894		....	....	....	....	....	...
Means.		971	....	....	49.68	....	....	2.88
New Company.	1895	1,225	....	....	49.95	2.05	0.89	2.94
	1896	3,715	....	....	39.91	2.08	0.84	2.92
	1897	3,980	....	....	51.85	1.99	1.00	2.99
	1898	3,400	28.26	13.65	41.91	1.76	0.27	2.03
	1899	2,500	19.76	5.84	25.60	2.24	0.12	2.36
	1900	2,000	17.05	8.50	25.55	3.00	0.25	3.25
	1901	2,000	18.60	6.85	25.45	1.55	0.20	1.75
Means.		2,703	20.92	8.71	37.17	2.10	0.51	2.61

The Year 1898.

Among the employees of the Company there was no sickness of an epidemic character; the sanitary conditions were satisfactory.

On the Isthmus generally, a light epidemic of influenza prevailed during the months of January and February, but no yellow fever or other sickness of an epidemic form appeared.

The Year 1899.

Among the employees of the Company there was a single case of yellow fever, contracted at La Boca in November by a Frenchman recently arrived and employed on the harbor works. He recovered. There was no other sickness of an epidemic form among the employees of the Company; and the sanitary condition was satisfactory.

In the city of Panama, between May and the middle of December, there were about 139 cases of yellow fever. Its victims were chiefly foreign sailors arriving in the Bay and Colombian soldiers from the interior.

In June and July a rather severe epidemic of influenza occurred. In September a short epidemic of measles caused some deaths.

The city of Colon appeared to be proof against yellow fever.

The Year 1900.

Among the employees of the Company a single case of yellow fever occurred, terminating in recovery, and there was no other sickness of an epidemic form. The sanitary condition was satisfactory, notwithstanding the rather high death rate caused by a larger number than usual of deaths from chronic diseases of a general type.

On the Isthmus generally yellow fever, which had disappeared after the middle of December, returned in March. Between that date and September 10th, about 138 cases occurred in Panama, of which 128 were among the Colombian soldiers from the interior. There was no other sickness of an epidemic form. The city of Colon escaped yellow fever.

The Year 1901.

No epidemic appeared among the employees of the Company, and the sanitary condition was very satisfactory.

On the Isthmus generally yellow fever, of which no case had been reported since September 10, 1900, was again imported in January, 1901, by a priest and a sister of charity coming from Buenaventura. It was communicated to a sister of the Orphan Asylum of the Central Hospital and then to the superior. The latter alone recovered. These four were the only cases in January, 1901; and since then up to the present month (March, 1902) there has been no return of the disease.

In April, 1901, a serious epidemic of smallpox appeared in Panama and still continues. The employees of the Company have suffered very little, a result which should be attributed to the numerous vaccinations which have been made.

The city of Colon appears always to escape these epidemics.

General Conclusions.

Considering the average figures for the last four years, I find that with a personnel of 2,275 the percentage of disease has been 29.65, and the mortality 2.35 per cent. These figures do not exceed those on large works in any country.

It should, however, be added that this personnel has been long on the Isthmus and is well acclimated; I may even say extremely so, since 91 per cent. of the total death-rate is due to chronic organic diseases common to all countries, leaving only 9 per cent. of it chargeable to the diseases of the local climate.

The classified employees, which constitute about 8 per cent. of the entire force, are represented in the total death-rate by 5.70 per cent., while the laborers are represented by 94.30 per cent. The mortality in the latter class is therefore the greater.

Among infectious diseases on the Isthmus yellow fever is undoubtedly the most to be feared by unacclimated persons of the white race. During the two recent epidemics of yellow fever—the first from May to December 15, 1899, and the second from March to September 10, 1900—only two cases appeared among the personnel of the Company. Both were French, one a workman on the wharf at La Boca who had been only a few days in the country, and the other the head nurse of the Company's hospital who had held this position for two years. To these should be added the Superior of the sisters at the Hospital, attached in January, 1901, after three or four months of residence, one of the four solitary cases of this month just mentioned. These three cases recovered. I attribute the last two cases to infection proceeding from the Foreign Hospital, which received a large number of the 261 cases occurring in the different epidemics and which, by its too close proximity, is a menace to the Hospital of the Company. The latter offers satisfactory sanitary conditions.

I have mentioned in former reports the disappearance of yellow fever from the Isthmus from the year 1892 to the year 1897. This would lead to the belief that the disease is in no wise necessarily endemic In 1897, indeed, between the beginning of March and the beginning of August, there were about 70 cases, as well at Panama as on a portion of the line of the canal; but no case occurred at Colon.

I will remark that the city of Colon, which up to about the years 1891-'92 was a terrain than which nothing could be better for yellow fever—reputed more dangerous than the city of Panama—has since that time remained free from any infectious disease and has escaped the yellow fever epidemics of 1897, 1899, and 1900. This is evidently due to the sanitary works which have been executed, the filling up of the many little swamps and the cleaning of streets which before were veritable sewers. By these improvements the city of Colon has been considerably freed from the swarms of mosquitoes which rendered life insupportable.

Might not a like result be secured for the city of Panama (1) by a good supply of pure water, (2) by drains to conduct sewerage to the sea, to which its situation and conformation are easily adapted, and (3) by watering the streets daily in the dry season. and by cleaning them daily throughout the entire year. Now they are in a repulsive condition of filth. These three improvements, which I consider fundamental and essential, are now wholly neglected.

There should also be instituted an effective quarantine service for vessels arriving in the harbor, for beyond all doubt the epidemics of 1897, 1899 and 1900, and the few cases which occurred in January, 1901, were due to importations, in one instance from the Atlantic and in three instances from the Pacific.

I do not expect by these measures to remove completely from Panama its character as a terrain favorable for the propagation of yellow fever; but certainly, if thoroughly applied, they would exclude some epidemics and render a residence on the Isthmus less dangerous for unacclimated persons of the white race.

The important works executed from one end to the other of the line of the canal have also done much to improve the sanitary conditions existing on the Isthmus.

LACROISADE.

Panama, March 9, 1902.

FOREIGN SOCIETIES.

French.

SYMPOSIUM ON CHLOROFORM NARCOSIS—INFLUENZA OF RARE TYPE—INTUSSUSCEPTION.

THE French medical and scientific societies covered a great deal of fertile ground during the month just ended. Among a very large number of most important topics under consideration the following have special interest. At the Society of Surgery in Paris, at the sessions of January 15th and 22d, a symposium on chloroform narcosis was held, with special reference to the cases of death directly due to this anesthetic and with reference to its value compared with ether. **Poirier** at the former of the two meetings reported a case of death by syncope directly attributable to chloroform during an abdominal operation, which he was doing on an old, much enfeebled woman. The accident occurred about twenty-five minutes after the beginning of the chloroformization. He incised the diaphragm and the pericardium, seized the heart in his left hand, but it was absolutely flaccid and he could not stimulate it to a single pulsation. **Delbet** said that he had recently seen a patient succumb who had hardly inspired more than a few drops of chloroform. This therefore differed from the death the former speaker reported, in that narcosis was hardly established. His associate, Segond, had also had a patient who died at the very onset of anesthesia. **Terrier** added that he had unfortunately had to deplore a certain number of deaths due to chloroform. Independently, however, of such accidents as are imputable directly to the drug, there are in his opinion certain facts which show that a cardiac syncope may occur as a result of fear and therefore kill the patient before the beginning of administration. Historically that which proves the possibility of death by this mechanism is the fact that there is published at least one case of this class during the epoch before the discovery of chloroform. On the other hand, in individuals debilitated by a septic intoxication, death may ensue after a few whiffs of chloroform. He has recently seen an example of this in a man very much run down from a long suppurative disease. Finally, it is necessary to note well that deaths from chloroform occur during a state of asphyxia in which operations may be begun. **Reclus** has had two cases of death in his service from this anesthetic. In the former the patient suffered from a tuberculous peritonitis and died after the first whiff of the drug. Fear in this case was undoubtedly a great factor, because he afterward ascertained that before the operation the patient had carefully distributed among his neighbors everything which he possessed. **Bazy** recalled that his friend, Richet, used to relate another case of death through fear, the patient having passed away as the cone was about to be placed over his face. **Quénu** believed that it would not be an exaggeration to attribute to fear alone death coming on early in chloroformization because the first few inhalations may perfectly well suffice to provoke in certain predisposed subjects an inhibitory reflex which may determine a fatal syncope. For several years on this account he has been in the habit of systematically giving an injection of morphine about a half an hour before operation in all possible subjects, believing that it is an excellent means of preventing this very cardiac syncope at the onset of anesthesia. **Richelot** said that the inhalation of bromide of ethyl preceding that of the chloroform serves in his experience the same purpose. Since he has adopted this practice he has not observed the least trouble at the beginning of anesthesia. **Ricard** considers a very important fact to be the ascertaining above all things the quality of chloroform which is furnished in the hospitals for anesthesia. It had come within his experience to have in the same twenty-four hours three successive cases in which dangerous symptoms appeared under chloroform, and, although he had been assured that the drug was perfectly pure, he could not avoid thinking that these three cases and others like them, which are in the experience of all surgeons, might very well be attributed to the bad chemical quality of the anesthetic. **Terrier** resuming said that a chemist of competent ability had declared to him that the verification of the purity of chloroform for the purposes of anesthesia is a factor not taken into account in most investigations on the subject.

At the meeting of the following week, January 22d, the same discussion was continued and the following gave their experience and opinions. **Gerard-Marchant** said that he had seen seven deaths from chloroform narcosis, five while he was interne and chief of the clinic, and two after he had become chief of the service. In these last two cases the patient suffered from pleuropulmonary surgical conditions. It would be possible for him to increase notably this list of deaths were he to add thereto observations of cases in which he had been simply a spectator rather than one of the operators. Since 1895 he has exclusively used ether and has never since had the least trouble. **Chaput** in his service at Bicêtre had seen deaths from chloroform to the number of three at very short intervals apart. Beginning with that time and during a long period thereafter he had entrusted anesthesia by chloroform always to the same aid, a very experienced man, and during the period had had no trouble whatever. In other words he has had to report one death a year. He has had one death under etherization. He therefore does not place absolute confidence in it. At the present time he employs successfully ether and then chloroform, hoping thereby to avoid the heart-failure apt to occur in the first part of chloroformization. **Hartmann** disputed the contention of Richelot at the last session to the effect that bromide of ethyl is a good drug to administer before chloroform. He does not put entire trust in it by any means, because he has had one death during the chloroform. He does not put entire trust in it by any means, because he has had one death during the chloroform narcosis in such a procedure. **Reynier** said that as a matter of fact and in general all methods of anesthesia may be attended by accidents. Notwithstanding what Gerard-Marchant stated about ether, this drug also has its deaths; likewise cocaine injected into the spinal canal, as is shown abundantly by recent reports published. As to chloroform there is hardly any reason for astonishment that it should offer certain dangers in certain cases, especially in grave ones. Fatalities in such cases ought not properly to be ascribed to the anesthetic, but rather to the gravity of the condition and the great hazard of the operation. For his part he has had during twenty-five years of active surgical practice only five deaths from chloroform. If these be analyzed minutely the calamities show that death might have been in each case avoided, and therefore in each case he feels that a fault or error was committed. In the first case he gave an injection of atropine and morphine before the administration of the chloroform, and now feels convinced that this injection was not without bad influence toward the fatal outcome. In the second case food had been taken before the anesthetic. The third patient died at the first whiffs of the chloroform, because these were given in too concentrated form. It is apparent that death would have been avoided in every probability if the administration of the anesthetic had been better regulated. The fourth fatality was produced in a woman who had the symptoms of cardiac disease, which he would have considered as a true contraindication if he had known about them. Finally, the last of his deaths due directly to the anesthetic was caused by the fact that the chloroform itself contained a large quantity of methylic alcohol. Reviewing these, therefore, and other cases he cannot but feel sure that, except in rare instances chloroform when given well should not be considered a dangerous drug. Guinard like Hartmann believes that mixed anesthesia successively of bromide of ethyl and chloroform does not give the complete security which Richelot claims for it. In effect, therefore, he has had occasion to observe with M. Pyrot a case of death by bromide of ethyl alone in a young woman, twenty-two years old, sick of rheumatism. At the autopsy he was able to show an endocarditis with vegetations, the existence of which had escaped attention before the operation. His conviction now is that all affections of the heart are able from the standpoint of anesthesia to cause very great and dangerous symptoms. Similarly he has seen one man die of cardiac lesions under chloroform. He is now in point of fact employing chloride of ethyl as recommended by Severeanu. With this he is very well satisfied, but he does not feel in position to affirm that its use will prove to be a harbor against all possible calamities. **Lucas-Championnière** reported a certain number of deaths by chloroform. Three of them could be imputed directly to the drug. In one of these cases the fatal issue had occurred ten hours after the administration of the chloroform. In the course of an operation, it is true, one would have practised artificial respiration. Although ether does not give as many deaths on the operating-table as does chloroform it gives a great many more after the anesthesia has been stopped. So far as disease of the heart is concerned, he believes that chloroform does not expose the patients to special danger. He is far more afraid of lesions of the lung and has seen them produce many much more grave symptoms.

GALLIARD, at the Medical Society of Hospitals, January 31, 1902, reported a rare form of influenza with symptoms proceeding successively from the intestines, the lungs and the heart in a young woman twenty-one years old, with a family history of tuberculosis. She entered the hospital with symptoms of obstruction of the intestine. These disappeared rapidly under the administration of electricity and a high enema. Two or three days after this, symptoms proceeding from the lungs appeared, cough, dyspnea and pain in the chest, together with a distinct elevation of temperature. Examination of the chest showed the existence of râles due to a disseminated bronchitis in both lungs, but predominating at the bases. There was also a systolic murmur localized at the apex of the heart. A bacteriological examination of the sputum made and repeated at different times was negative so far as the finding of tubercle bacilli was concerned, but a diagnosis of influenza was thereby established and it was decided that the invasion was gastro-intestinal primarily, the lungs and heart being involved secondarily. The evolution of the disease confirmed the diagnosis, because the girl was discharged from the hospital to all appearances completely cured at the end of two months. She carried away only her systolic murmur of the heart, which showed that the lesions at the level of the mitral valve were still present.

MOUTARD-MARTIN gave the history of a child, four and one-half months old, who suffered from intestinal invagination. For several days the condition manifested itself only by a loss of appetite and by the absence of feces, which were replaced by an excretion of glairy liquid very slightly tinged with blood. Soon it was possible to make out a hard tumor, not painful, in the iliac fossa on the left side, and, finally, by rectal examination to reach a soft mass filling the intestine and giving the sensation of a blind pouch. In the presence of these signs the diagnosis of intestinal invagination was made. Since there were no signs of peritonitis a laparotomy was done; this confirmed the diagnosis. The invaginated portion of intestine comprised the cecum, appendix and a small part of the ileum. Except for a few light adhesions which united all these parts, the reduction was done without much difficulty and after the application of a few sutures over the parts thinned out by tearing away the adhesions, where rupture threatened, the work was quickly done. This operation was immediately followed by a large dejection of feces. Except for a few small stitch-hole abscesses in the wound recovery was not retarded in any way.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held March 20, 1902.

The President, Robert F. Weir, M. D., in the chair.

THE scientific proceedings of the evening consisted of a Symposium on Operations for the Relief of Paralytic Deformities with special reference to Tendon Transplantation, given under the auspices of the Section on Orthopedic Surgery.

History of Operation.—The first paper of the evening, Introduction, History and Indications for the Operation of Tendon Transplantation, was read by Dr. Royal Whitman. He said that the first operation for tendon transplantation was done in 1882 by an Italian surgeon, Nicoladoni. For several years afterward this operation attracted very little attention. Then operators in other countries began to take it up. An imporant variation of the operation was introduced which consisted in the direct attachment of the transplanted tendon to the periosteum of the bone at the point that would give the muscle the best mechanical advantage. The operation has been in use for about twenty years, though during the first ten it may be considered dormant.

Indications for Operation.—The operation of tendon transplantation should not be undertaken until the deformity has reached its final stage and is irremediable by any other method of treatment. The time that must elapse for this in any ordinary case is at least two years from the onset of the paralytic condition. Certain facts with regard to muscles and their power under ordinary circumstances must be remembered in order to make tendon transplantation successful. The plantar flexors, for instance, are much more important than the dorsal flexors in the foot and are meant to exercise much more power; their function is to lift the body and give it the forward swing in walking or running. It can be easily understood, then, that when they are paralyzed it would be a difficult matter to supply their places by the transplantation of other muscles. At times, however, tendon transplantation is undertaken not for the direct power that may be transferred, but in order to remove a distorting force. Conservative opinion does not expect as much from transplanted tendons as is popularly believed. It is well understood, however, that a certain amount of compensatory hypertrophy may be expected to make muscles stronger, as the result of judicious exercise, but this will by no means make the condition equal to that of the normal limb.

Results of the Operation.—In reporting cases it is usually assumed that the results after a long period will represent a continuance of the improvement to be noted two or three months after the operation, but this is not always true. As a matter of fact, the primary overcorrection after operation usually sets opposing forces at rest for some time. This gives rise to hope when the patient is first relieved of his dressings and the transplanted muscles perform their first actions. After a while the overcorrection fails and the result is thus often very disappointing. Massage and proper stimulation of muscles with galvanism and other methods of keeping them up to their acme of tonicity should be employed and will often serve to prevent what would otherwise prove a post-operative failure. In the upper extremity not very satisfactory results can be expected and the field for the employment of the operation is rather limited. The hand has normally rather complex movements to perform and these cannot be accomplished by the muscular power conveyed through transplanted tendons. When palmar flexion of the hand interferes with the action of the fingers and keeps the hand in an awkward, unsightly position the transfer of the flexor tendons to the back of the hand at the wrist may be accomplished and will give some satisfactory results. The standard for the results obtained by tendon transplantation must be the normal member and its power of movement; judged by this standard the results are not generally satisfactory, the popular notion that marvels can be accomplished by means of this method of operating being entirely overdrawn.

Arthrodesis.—This operation, as its name implies, is the locking of a joint and is meant to anchor a dangling limb or stiffen a joint, so as to enable a member to be used more readily than would otherwise be the case. It is not a very useful operation and not very widely applicable. When the knee, for instance, has been rendered stiff, it is not unusual for it to become somewhat deformed by bending. At the ankle much better results are accomplished by arthrodesis. The shoulder joint may often be improved by producing ankylosis between the humerus and the scapula if the scapula itself be free to move. The scapula with its muscles will compensate for nearly all the ordinary movements of the shoulder joint.

Deformities Due to Muscular Paralysis.—Dr. Wisner R. Townsend read a paper describing the method by which deformities due to muscular paralysis are reduced and the various methods in which tendon transplantation can be employed for the purpose of correcting the deformities. Dr. Townsend said that the principal object of the physician in charge of a case should be to prevent the development of the deformity. This does not develop immediately after the occurrence of a paralysis, but gradually and as the result of certain definite factors. The careful employment of massage, electricity and other forms of muscular stimulation will often prevent the occurrence of serious deformity and render it much easier for the orthopedic surgeon to accomplish the purpose of helping the patient perform ordinary movements. The general practitioner does not sufficiently realize his duty in this matter and many of the deformities that come to the orthopedist might almost be said to be the result of unpardonable negligence.

Causes of Deformity.—The principal causes of the development of deformity in paralyzed limbs are gravity and the overaction of muscles. Of these gravity is the most powerful factor. If, for instance, the muscles at the back of the neck become paralyzed, the head falls forward on the chest, the deformity is very marked and the contraction of tissues soon makes it permanent. If the muscles at the dorsum of the hand or foot suffer, "drop-foot" or "drop-wrist" develops and soon requires correction. Unopposed muscular action is, however, an important caustive agent in the production of deformity. It is especially active in the hand and foot. It has not much to do with the production of deformity around the larger joints, and in the trunk whatever tendency to deformity is produced by this factor is effectually opposed by the movements of respiration.

Possibilities in Tendon Transplantation.—It is not enough merely to transplant tendons in cases of deformity and then expect that the patient will be decidedly improved. During the development and the continuance of the deformity the skin, tendons, fascia, in a word, all the soft tissues of the part have become contracted and all of them must be treated, if the tendon transplantation is to have its due effect. The tendons selected for transplantation must be of suitable character to do the work required of them. The plantar flexors of the foot, for instance, are five times as strong as the dorsal flexors. The calf muscles are more powerful than all the other muscles of the foot taken together. It can readly be understood that when these muscles are paralyzed they cannot be replaced by portions of the dorsal flexors with any hope of a reasonably satisfactory functional result.

Reports of Tendon Transplantation.—The literature of tendon transference is increasing very rapidly in all countries and languages. The results as given, however, by the various operators are not of great value for the comparative study of the operation because they lack definiteness. Favorable results are reported too soon after the operation. At times the report is especially incomplete because it says in general only "result good" or "result satisfactory". There is no rule that can be applied to types of cases. Success depends on the selection of the cases and on the proper employment of such muscular tissues as are present. An extremely important element in these cases is the after-treatment, though this is sometimes considered of not very much importance. In the lower extremity particularly after-treatment is sure to be needed. Braces must be worn for a long time, perhaps even for life. and a knowledge of such apparatus is demanded of the surgeon if he is to secure enduring results. Tendon transplantation, far from doing away with the necessity for orthopedic experience, absolutely requires it and even broadens the field of its application.

Technic of Operation.—Dr. Virgil P. Gibney read a paper on the technic of the operation for tendon transplantation and detailed the results obtained by this operation at the New York Hospital for Ruptured and Crippled. The first operation of this kind was performed at the hospital about six years ago (in 1896) on a child, ten years of age, who had suffered from anterior poliomyelitis at the age of one year. Since then there have been ninety-two operations for tendon transference. The principal features of the technic of the operation as done at the hospital are as follows: Instead of the ordinary incision transverse to the axis of the limb, a vertical incision is made through the skin in order to come down upon the tendon. The operation is made as bloodless as possible by the previous use of an Esmarch bandage. A long incision is made, but not longer than is absolutely necessary; keloid has been known to develop in such incisions at times, and it is better to make two incisions some distance apart and to burrow somewhat for the tendons in the space between them than to make one long incision.

Necessity for Asepsis.—Needless to say, the most careful aseptic precautions are needed in order to prevent the occurrence of any inflammatory reaction afterward, for this would surely interfere with the success of the operation. The tendons should not be touched at all with the naked fingers but should be handled by means of bits of gauze and other such auxiliaries; it is an excellent precaution for the surgeon to wear gloves. If forceps be employed to handle the tendons the greatest care should be taken that pressure is not exercised upon them, because tendon tissue is not very actively vital and the success of the operation depends upon as much vitality as possible being preserved. For the same reason no hooks or dilating clamps should be allowed to come roughly in contact with the tendons. It has been suggested that an incision should be made over the belly of the muscle in order to determine its condition. If it be yellowish in color or atrophic in appearance, the tendon from it should not be used for purposes of transplantation. This seems a needless precaution, however, for the general character of the muscle can be rather well judged apart from this and the incision only adds another risk to the possible occurrence of an inflammatory process after the operation.

Tendinous Insertions.—The most important bit of knowledge required for the successful performance of the operation is the detailed anatomy of the tendons and especially their points of insertion. Dead tendons should never be fastened to live ones, but the insertion should always be made the other way. For the anchoring of tendons the favorite suture material at the Hospital for the Ruptured and Crippled is silk. Kangaroo tendon was used at first, but this seemed to be a rather irritating material and did not give satisfaction. Silkworm gut was used for a while, but caused the occurrence of fistulous tracts as the result of persistent irritation. As a rule no drainage is employed after the operation, but at times a small drain is inserted and left in place for forty-eight hours. After the tendon transplantation has been done the member is put up in plaster in a position of overcorrection. The plaster bandage must be worn for months in order to secure the overcorrection that leads to the proper stretching and contraction of muscles so as to accomplish the purpose expected of them.

Results of Operations.—Of the ninety-two operations of this kind done at the hospital about 32 per cent. have given a good result, 52 per cent. a fair result and 18 per cent. a negative result. By good result is meant that after the tendon transplantation the muscles acted as they should act, did not tear loose from their new anchorage and the improvement in the functional condition still existed after two and one-half years. After tendon transplantation it is quite usual for the patients to have to wear apparatus; this is especially necessary in growing children, because the developing tissues are always put to such a severe strain that if they are handicapped by some deformity they will almost surely yield to the stresses of ordinary use unless mechanically helped. Fair results in these cases mean that the patients have been distinctly improved though not to the extent expected when the operation was done and because the ultimate result is more or less doubtful. In none of the patients is the resulting condition worse than it was before the operation. A negative result means only that the patient was not helped and never means that the sufferer was rendered less able than before to perform any functions.

Special Operations.—Dr. Gibney presented some patients on whom special operations had been done. In one, because of drop-wrist from paralysis of the extensors, the interosseous space had been opened and a piece of celluloid inserted and allowed to remain for several weeks. Through the space thus obtained the flexor tendons were conducted and transplanted upon the extensor tendons with a functionally good result. In a first operation a hollow piece of celluloid was used, but it was found that a solid piece produced less disturbance in the tissues. Some of the results in drop-wrist seem to show that tendon transplantation may give better results in these cases than has been thought. For bandy-leg five operations were done at the hospital. The results, however, have not been satisfactory mainly because the muscles transferred in order to correct the deformity are not strong enough to make up for the powerful muscles the energy of which is lacking.

Neurological Questions in Tendon Transplantation.—Dr. Joseph Collins read a paper in which he considered the physiological and dynamical problems involved in the transplantation of tendons. The fact that a flexor tendon can be secured to an extensor tendon and that gradually the patient can learn to use the muscle so as to accomplish extensor actions seems at first an impossibility. As a matter of fact, however, the muscular force has of itself, no special direction. When an impulse is sent calling for muscular exertion the effect produced depends on the parts on which the muscle acts. While originally it may have been intended to do flexor work it may be converted mechanically in such a way as to do extensor work. In the brain its object is not necessarily specified.

Prophylaxis of Deformity.—Undoubtedly one of the saddest chapters in therapeutics is that of poliomyelitis. It is true nothing can be accomplished for the disease itself and the obliterated cells in the spinal cord cannot be replaced. This does not constitute, however, an adequate reason for considering the disease from a pessimistic standpoint only; there has been too much *laissez aller* in this matter of the treatment of anterior poliomyelitis. Practitioners have concluded that no good could be accomplished and so all incentive for the treatment of these cases has been lacking. This apathy with regard to poliomyelitis is unwarranted by the facts of the case. Parents are sometimes told in a spirit of pitiful sympathy that the child may grow out of the muscular weakness, which is, of course, hopeless, and unfortunately during the expectant period the child is left to go on to serious deformity. If the paralyzed muscles were properly treated by massage, galvanism, and strychnine whatever muscular energy they possess would not be allowed to become dormant. It is true the muscles depend on the trophic influence from the cells in the spinal cord, but these are not often entirely obliterated and even a small nerve supply may suffice to keep the muscle in a certain state of tone that will prevent deformity. It cannot be insisted on too much that great good may be accomplished by the persistent treatment of such cases. Much more good will be done in the end than by placing too much confidence in the possible benefit of tendon transplantation.

Transplantation in Spastic Palsies.—It seems important to differentiate the causation of forms of muscular palsy. In cases in which muscles are paralytic because of cerebral hemorrhage or porencephalus much can not be expected from attempts at stimulating the muscles to renewed energy. In such cases as those of Little's disease in which muscular spasticity is due to loss of coördination because of improper conduction of nerve force something may be expected from treatment. The nerve force is often conducted to the opposing muscles in too great degree, and this can be compensated for by using some of the opposing muscles to help out the weaker muscles in their ineffectual attempt to keep the member in normal condition and function.

Nerve Impulses and their Expression.—When a nerve impulse is sent out for muscular movement it is not directly destined to cause either flexion or extension. Because it has always caused flexion is no reason why it should not cause extension if it could be shunted so as to apply to a muscle so attached as to act as an extensor. It is exactly the same as if a locomotive were sent out from New York to Boston every day for a year. It might at the end of the year be shunted any day so as to go to Buffalo and yet this would not be thought a marvel. Undoubtedly a muscle can be made to adapt itself to altered conditions. In children this muscular adaptability is much greater than in adults. There is no doubt that much can be hoped for from tendon transplantation and that it can be made to apply to spinal cases and especially to muscular spasticity much more than has so far been attempted.

Dr. Reginald H. Sayre said that his personal results had been at times very satisfactory, though often only moderate benefit had been derived from the operation. The cases in which there was most personal satisfaction and the result of which proved encouraging for the further employment of the operation were those in which the ultimate condition was better than had been originally anticipated. In some cases movement is better several years after the operation than just after its completion.

Dr. Myers said that the encouraging feature of the operation is that with reasonable care there are no bad results. The cases are often so pitiful that the hope of doing anything with the sure prospect of not ultimately making worse the condition is of itself an incentive to try the operation.

Dr. Sachs said that it is encouraging to the neurologist to find that the surgeons are so confident of the benefit that can be derived from the operation. There is no doubt that some seemingly hopeless cases can be improved to an extent which makes life very much more livable than before. The operation is entirely rational and it seems probable that it will be extended in its application to cerebral spastic palsies as well as to spinal palsies and to flaccid paralyses of various kinds. It would seem rational that in cases in which nervous force is causing overaction of certain muscles some of this may be diverted to the underacting muscles. At times, of course, there is no real overaction of muscles, but only underaction and then good results can not be looked for. It is a very curious thing to think of this employment of flexor muscles to produce extension, but there is nothing in it contrary to physiology when the motions involved are thoroughly analyzed. Not all may be able to comprehend Dr. Collins' very lucid explanation at once, but that an explanation exists there is no doubt.

Dr. Taylor said that there is a popular exaggerated idea that by the transfer of tendons to any part of a paralyzed member extraordinarily marvelous results may be produced. It is well to have a conservative view, then, of how much the operation can do and what its indications and limitations are.

Dr. Teschner said that not infrequently serious deformities produced by poliomyelitis may be greatly improved by the proper application of massage and rationally directed movements and by the placing of the member in a position that enables it to exercise its function as was originally intended. Dr. Teschner has seen such cases greatly improved and, even if ultimately tendon transplantation be decided upon, the muscular condition will be much more favorable for the success of the operation. As a matter of fact it would seem that the regeneration of atrophic muscles may to a certain extent be brought about by stimulation and exercise of associated muscles in the same group that are less impaired in their vitality.

Dr. Hibbs said that at the New York Orthopedic Hospital 150 cases have been treated by tendon transplantation. When sufficient time is allowed to elapse the ultimate results are, as a rule, very disappointing compared with the immediate results. In itself muscle transplantation practically never fulfils expectation and is only a help to the use of apparatus. It is not an independent orthopedic measure; it does not prevent deformity, but may be used as an adjunct that facilitates the application and the use of apparatus and that thus enables the orthopedic surgeon to use every possible bit of force that the patient can exert. The operation undoubtedly deserves a place in the armamentarium of the orthopedic surgeon, but has nothing like the marvelous effect that is sometimes claimed for it popularly.

Tendon Transplantation in the Hand.—Dr. Townsend, in closing the discussion, said that in certain cases in which the extensors are paralyzed, much good can be accomplished by transference of the flexors so that they act upon the back of the hand. In order to do this, however, the wrist must be fixed so that not all the tendons should be transferred but one at least should be left so as to fix the wrist. For this purpose the palmaris longus is sufficient. Needless to say, in these cases pronation and supination can not be recovered, but only the power of lifting the hand upward.

NEW YORK ACADEMY OF MEDICINE.

Section on General Medicine.

Stated Meeting, Held March 18, 1902.

James K. Crook, M.D., Chairman.

The scientific business of the evening consisted of a Symposium on Articular Rheumatism.

Pathogenesis of Acute Rheumatism.—Dr. Heinrich Stern read a paper on this subject, in which, after discussing the various bacterial causes that are at present so frequently considered for rheumatism and showing that there is no consensus of opinion with regard to the specific microbes that may cause the disease, he said that the chemical causes of rheumatism must as yet occupy considerable attention. He treated especially of the question of an excess of lactic acid as a cause for articular rheumatism and of the blood alkalescence that the presence of this organic acid is said to cause. In Dr. Stern's own observations the variations in blood alkalescence during rheumatism have not sufficiently departed from the norm of average blood alkalescence to make this seem an important factor.

Urinary Acidity.—While lactic acid has not been demonstrated in the blood of patients suffering from rheumatism, it has been found in the urine. An excess of acid in the urine is quite common in rheumatism, but urinary acidity is always increased as the result of febrile conditions and it has not yet been proved that in rheumatism there is more of an increase than would occur because of the fever. Lactic acid has been found in the urine of patients suffering from epilepsy and also in that of leucemic patients, in those suffering from arsenic, cocaine, amyl-nitrite poisoning, and after excessive muscular action. As fever causes a waste of tissue somewhat resembling that due to muscular action it is not improbable that a rise in temperature would also cause the presence of lactic acid. The acidity of the urine in rheumatism is not abnormally above the average of that which would occur in corresponding febrile conditions from other causes. Moreover, the acidity of the urine is due not to an excess of acid directly, but to a larger amount than usual of acid sodium phosphate, the substance which usually causes the urine to have an acid reaction.

While Dr. Stern does not believe that micro-organisms alone can explain the origin of articular rheumatism, he feels sure that chemism of the tissues will eventually be found to be an important factor in the disease. Thus far no theory of its causation can be formulated with any certainty, but it behooves medical men to pay attention to these chemical questions in the disease.

Symptomatology and Diagnosis.—Dr. Leonard Weber read a paper in which he discussed the symptoms and the differentiation of acute articular rheumatism. He said that, while the disease is perhaps due to a micro-organism, there is no doubt that the predisposition to it may be inherited and that it is fostered by the patient's environment and by his occupation. The nervous and bacterial theories of causation account for the immediate origin of the disease, but dampness has much to do with its development and it undoubtedly occurs with special frequency in the spring and early summer months. When fully developed the temperature of the disease is from 102 to 104°F and the pulse rises above 100. Hyperpyrexia occasionally occurs, and as it is not influenced by the salicylates, according to Dr. Strümpel and other excellent authorities, it is probable that it is not directly a rheumatic symptom. Delirium occurs sometimes in connection with the disease and is a genuine symptom either of hyperpyrexia, or of the influence of the toxins of the disease upon the nervous system. It must not be forgotten, however, that in many cases delirium follows the use of the salicylates in especially susceptible subjects and then must not be attributed to the rheumatic condition. Stoppage of the salicylates in these cases at once puts an end to the delirium.

Special Joints Affected.—Usually several joints are affected by the rheumatic process. At times, however, a single large joint may be the sole seat of the disease. This mono-articular rheumatism occurs very seldom and usually is open to the suspicion that it is not genuine acute articular rheumatism, but some other infection that is at work. Dr. Weber has seen cases of mono-articular arthritis, however, with cardiac complications and affected promptly by the salicylates, that were undoubtedly of true rheumatic origin. The vertebral joints are very seldom affected by rheumatism. Dr. Weber has seen, however, at least one case in a medical student, in which the joints of the vertebræ in the lower dorsal and lumbar regions were affected by the tenderness, redness and swelling characteristic of rheumatism in which the symptoms were promptly modified by the use of the salicylates.

Blood Conditions.—Leucocytosis is a prominent picture of rheumatism and rapid anemia is prone to develop. An apex murmur develops almost at the beginning of the fever and is probably due partly to the fever and partly to the change in the constitution of the blood consequent upon the anemia. This murmur should not be considered significant of a heart affection unless it continues after the defervescence. If it does continue then the patient must be kept in bed for several weeks at least and must be kept as quiet as possible. Albumin is sometimes found in the urine, but must not be considered as significant of more than a passing nephritic irritation, unless it occurs in connection with casts, especially granular casts or other signs of degenerative process in the kidney. The rapid development of anemia so characteristic of rheumatism causes a lack of stability in the blood which easily permits its constituents or at least some of them to pass over into the urine under the form of albumin.

Endocarditis.—Endocarditis in Dr. Weber's opinion must not be considered as a complication of acute articular rheumatism, but rather as a feature of the disease. In rheumatism the endocarditis is always of the verrucose variety and is not ulcerative. Ulcerative endocarditis occurs only in connection with a mixed infection. This is the most serious condition in rheumatism, however, and the one that needs treatment most. Sclerosis of the valves may be prevented by rest and proper care. Rest is the most important single element in the treatment of the disease. The salicylates are a specific for the attack of rheumatism; that is, they relieve the fever, the pain and the restlessness that accompany the affection, though they are not a true specific remedy for the disease itself and do not guarantee any shortening of its course. Rheumatism is probably, as Flint and Bland Sutton declared, a self-limited disease. This is, however, only the rule and there are certain subacute varieties of the disease that run a prolonged course. Undoubtedly some of the cases of presumed rheumatism that fail to be benefited by the salicylates are really not genuine rheumatism, but are due to the pus micro-organisms.

Traumatic Influences.—Dr. Weber considers that after a joint has once suffered from the rheumatic process this may be lighted up again by trauma or even by some other infectious or toxic material that irritates the joint tissue. Dr. Weber saw a case recently in which the young man suffered some years ago from an acute polyarticular rheumatism. This yielded promptly to the salicylates and ran the ordinary course of true rheumatism. Later the young man developed gonorrhea and suffered from articular rheumatism in the same joints that were affected before. The joint symptoms were all influenced by the salicylates, though the case was at first considered to be one of gonorrheal rheumatism. In this case it would seem that the toxins of the gonococcus finding their way into the blood awakened the old arthritic condition which had been lying dormant in the joint tissues.

Complications and Sequelæ.—Dr. Frank W. Jackson said that only certain complications of rheumatism are of importance and most of these are rather rare. True rheumatic hyperpyrexia with a sudden rise of temperature to 105° F., with dry, brown tongue, dry skin, weak, rapid pulse, and a tendency to collapse, as described in the text-books, Dr. Jackson has never seen. As his experience includes the services of several important hospitals, it would seem that this complication is not common in this country or at least not in our Eastern States. Nor has Dr. Jackson seen the delirium that is said to occur with rheumatism, except under circumstances in which it could be attributed either to previous alcoholism or to the use of too large doses of the salicylates in a patient with an idiosyncrasy against the drug. Usually when he has seen delirium it has been in young subjects taking large quantities of the salicylates and suffering from symptoms of salicylism. Stoppage of the salicylates in such cases caused relief of the delirium. In alcoholics the delirium seen is typical of that which occurs in these subjects whenever the strain of injury or infection is put upon their systems.

Rarer Complications.—Iritis is sometimes spoken of as a complication rarely seen by the general practitioner and yet Dr. Jackson has seen some half dozen cases which were undoubtedly due to simple rheumatism. Affections of the pharynx and tonsils have so distinct a connection with rheumatism that they would seem not to be a complication, but to form an actual feature of the disease. At times tonsillitis may be seen in gouty rheumatism, though it does not seem to have as intimate a relation with this affection. Dr. Jackson has never seen bronchitis in connection with rheumatism or pneumonia. When these complications occur it would seem that there is some other cause at work besides the rheumatism. Meningitis also seems to be an adventitious affection rather than an actual rheumatic complication. On the other hand, pleurisy and acute rheumatism are quite closely connected and seem in many cases to be undoubtedly due to the same specific cause. Rheumatic pleurisy is, as a rule, of the dry variety and at most goes on to the production of fibrinous pleurisy or the development of adhesions. It seems to Dr. Jackson that pleurisy is often overlooked in rheumatism because thoracic pains are usually set down to muscular rheumatism. Very seldom does he care to put down intercostal neuralgia or myalgia as a diagnosis in his case books. Careful examination usually discloses the existence of a limited area of pleurisy. This limited patch of pleurisy is not easy of detection unless the examiner is reasonably sure beforehand that it must be there and looks carefully for it. Rheumatic pleurisy is probably much more frequent than tuberculous pleurisy, though it has been the custom to think of tuberculosis in connection with pleurisy very commonly of late years.

Other Complications.—Peritonitis is sometimes set down in the text-books as a complication of rheumatism. Something of this is due to the fact that septic conditions which invade the peritoneum have originally existed in the joints and have given something of the picture of rheumatism and produce the idea of its spread to the peritoneum. Dr. Jackson has never seen a case of peritonitis which he thought could be called truly rheumatic and considers such a complication of rheumatism extremely rare, if it really ever occurs. Nephritis is also a rare complication of rheumatism. There is no doubt of its occurrence, however. It is not so apt to be fatal as are other forms of nephritis. Dr. Jackson has seen very severe cases of nephritis complicated with rheumatism which have gone on to recovery. In a recent case the prognosis seemed almost surely fatal, yet the patient recovered. In a very severe case seen fifteen years ago, the patient not only recovered, but now presents absolutely no signs of nephritic degeneration.

Pericarditis.—In Dr. Jackson's opinion pericarditis is not a frequent complication of rheumatism, although it has been set down as occurring rather commonly. This is probably due to the fact that affections of the pleura near the heart may cause some of the symptoms that give rise to the diagnosis of pericarditis. The friction sound and the precordial distress especially may be marked in what is really a pleuropericarditis and not a true pericarditis. For the diagnosis of pericarditis there should not only be the precordial pain and the friction sound, but there should be a dyspnea and a rapid heart. These are apt to be lacking in pleuropericarditis. The diagnosis of pericarditis should not be made without the rational signs of the condition, as well as the physical signs.

Myocarditis.—Dr. Jackson considers that myocarditis is very difficult of diagnosis, especially during the actual course of acute articular rheumatism. The heart is apt to be rapid and rather weak as the result of the fever and the toxins in the blood and the differential signs are not sufficient to enable us to be assured of the diagnosis of myocarditis. If both endocarditis and pericarditis be present, the diagnostician is justified in assuming the existence also of a myocarditis. The condition of rheumatic inflammation of the heart muscle itself can only be recognized by the marked heart weakness that accompanies the affection.

Endocarditis.—This occurs much more commonly in certain groups of rheumatism than in others. There is no pathognomonic test of the presence of endocarditis during rheumatism and a physician must not allow himself to be deceived into considering the existence of a murmur as justifying the diagnosis of endocarditis. One of the most prominent symptoms of the disease is the sudden growing worse of the patient without an increase of joint symptoms. Even when true endocarditis is present the murmur heard from it may vary much from day to day. It may be entirely absent at certain times of the day and yet be due to an actual lesion of the valvular endocardium. Some patients recover absolutely from endocarditis and without any symptoms of valvular shriveling. This is not due to the fact that the heart compensates for any mechanical difficulty that may be present, but the valvular tissues actually recover sufficiently to enable them to do their work as perfectly as before.

Sequelæ.—Dr. Jackson considers the only important sequela of rheumatism to be anemia. This occurs very early in the course of rheumatism and if the affection be prolonged is apt to reach a severe degree. In many persons the reaction of the blood-making organs proves insufficient to make up for the anemic condition that follows rheumatism for many months after the disease itself has passed. Chronic endocarditis might be set down as a sequela of rheumatism, but the only thing that can be said about it is the question of prophylaxis. For this rest is the most important element of treatment. Without rest the endocarditis will assume a form in which it becomes absolutely incurable.

Prognosis and Treatment.—Dr. W. H. Thomson said that in the ordinary text-books the question of treatment seems to be relegated to a sort of postscript to the consideration of the disease itself. There are a languor and skepticism with regard to therapeutics generally that are extremely unfortunate. Usually students are told that the salicylates are a specific for rheumatism. In the first case a young doctor has to treat they act as such and he rejoices over the fact that the annoyance so often presented by rheumatic cases according to old practitioners is not to be his lot. Then in the second or third case the greater the doses of salicylate, the more the joints become involved and the more serious the symptoms. Meanwhile the patient grows more and more anemic and the young doctor's confidence in the salicylates is lost. As a matter of fact, it would seem that rheumatism is a self-limited disease and its course is about six weeks. It does not necessarily last as long as this, but it may and very frequently does. One in five of rheumatic cases have a relapse. The question is, can these relapses be prevented in any way? The salicylates do not act as an antidote or germicide, but they lessen pain and lower temperature. They evidently do not effect the organism on which rheumatism depends.

Avenue of Entrance.—For the prevention of rheumatism originally and for the prophylaxis of relapses it would seem important first to guard the ordinary avenues of entrance of the micro-organism which may cause rheumatism. The tonsils are undoubtedly one of the main avenues of entrance. In 20 per cent. of the cases of rheumatism an antecedent history of tonsillitis is found. According to Dr. Thompson's experience the precedence of tonsillitis is even higher than this, reaching as high as 25 and 30 per cent. The close analogy between rheumatism and gonorrhea points beyond all doubt to some avenue of entrance for the micro-organism of rheumatism through the mucous membrane. Moreover, some patients always have an attack of articular rheumatism after tonsillitis. Hence the first and most important problem in treatment is that of prophylaxis by thorough cleansing of the tonsils.

Tonsillar Cleansing.—The tonsils and the pharynx can be thoroughly cleansed, by means of a Davidson syringe, the stream from which is directed into the open mouth while the patient leans over a basin. The solution used for cleansing purposes should contain chlorate of potash and oil of gaultheria. This should be used frequently in patients who are susceptible to rheumatism and who have a tendency to tonsillitis. When this is done faithfully there is no doubt that in certain cases attacks of rheumatism can be aborted, relapses can be avoided and very probably rheumatic tendencies eradicated.

The Skin and Rheumatism.—People who are especially liable to suffer from rheumatism often have a skin that is very sensitive to changes of temperature. All their peripheral nerves are apt to be in an excited, irritable condition. Patients of this kind, when suffering from a cold in the head, will know when a door down stairs is opened, though no one else may feel the slightest change in temperature or in the condition of the air. There is no doubt that moist cold acting on the skin has a tendency to predispose to rheumatism. One might expect, therefore, that rheumatism could not exist except in countries especially moist. As a matter of fact, the Arabs, even in the desert, suffer very severely from rheumatism. The conditions of their life, however, furnish an explanation of this apparent anomaly. During the day the atmosphere in the desert is hot and very dry. During the night the temperature falls so that in the morning it is quite cool. This is accompanied by a copious deposition of moisture from the air. The Arabs are apt to be covered with cold moisture in the morning after having gone to sleep in their hot, dry tents at night. Hence even in places where there is no rain there may still be sufficient moisture for the predisposition to rheumatism to become actual acute illness.

Woolen Coverings.—This tendency of moisture to act as a predisposing agent to rheumatism forms an indication for the treatment of the disease. Rheumatic patients should be dressed entirely in flannels and should be covered with woolen blankets. These absorb any moisture that may be on the skin and prevent the effect of the sweating that is so common during the disease from causing a vicious circle of pathological consequences. When the feet sweat a great deal, daily vaseline inunctions may be of service.

The Alkalies and Iron.—The alkalies have been displaced by salicylic acid at the cost of considerably more heart complication than formerly. They should always be combined with the salicylates in the hope of preventing endocarditis. When endocarditis has occurred and the heart is fast and irritable, aconite by decreasing the rapidity and irritability is the best medicine to secure the cardiac rest which is a prime necessity for successful therapeutics. Anemia is a marked feature of rheumatism and occurs early in the affection. Iron is always a mischievous drug in the anemia of rheumatism. Cod liver oil is much better. Phosphorus is problematic, but has been highly recommended. Arsenic in small doses is useful in some cases. The salicylates should not be given in a routine manner, and the sodium salicylate, which is most commonly employed, causes prostration and is a serious depressant of the heart muscle. Strontium salicylate is less depressant and quite as efficient. In the tedious cases in which the salicylates fail after five or six days their administration should be given up and lemon juice alone administered.

Rheumatism a Polymorphous Affection.—In discussing the papers Dr. Morris Manges said that rheumatism is polymorphous and probably not due to a single microbic cause. It was formerly considered that muscular rheumatism was a masked form of articular rheumatism. The varying manifestations, however, show the difference of the disease under varying circumstances. The marvelous effect of the salicylates in acute anginas would seem to point to the fact that these affections are connected with rheumatism. Dr. Manges has not found iron injurious in rheumatic anemia and thinks that subacute rheumatism especially is benefited by the organic iron preparation, though the chloride of iron must be avoided. He considers that pericarditis is more common than has been thought, because cases of adherent pericardium are quite frequently found at autopsy.

Form of Salicylates.—D. Simon Baruch said that to get the effect from the salicylates without their inconveniences pure salicylic acid should be used; only that derived from the oil of gaultheria should be employed. With this Dr. Baruch gives ten grains of sodium bicarbonate, making an extemporaneous sodium salicylate. He gives twenty grains at about four in the afternoon and the same dose at six, eight and ten, until the patient has taken about eighty grains. The tendency to salicylism is slept off, though the ears may ring until about noon next day. Compresses of cool water give comfort to the joints. If the temperature be high, water should be used abundantly.

Dr. Abraham Meyer thinks that only the salicylic acid from genuine oil of wintergreen should be used. There are two other kinds of salicylates, the synthetic and that made from synthetic oil of wintergreen. These cause disturbance of the stomach and delirium.

Change in Character of Rheumatism.—Dr. A. H. Smith said that when he began to practise medicine rheumatism was considered a very severe affliction from which patients frequently suffered fearful torments for days and weeks without relief. They became so sensitive that the slightest movement or touch or even walking about the room caused them pain. In his opinion the introduction of the salicylates is responsible for the fact that such severe cases are no longer seen. He considers, however, that the old alkali treatment was of decided advantage. In his hospital practice he uses what is called the ABC mixture, consisting of acetate of potash, bicarbonate of potash, and citrate of potash in equal parts. These are used in combination with the salicylates. One objection to the use of the salicylates is the serious sweating they occasion. This constitutes not only a serious drain upon the system, but gives rise to some danger of relapse. Dr. Smith believes that he has aborted cases by treating peritonsillar inflammation as if it were rheumatism. The difficulty is that certain patients with subacute rheumatism absolutely refuse to recover. About three-fourths of the patients can be cured without trouble. The remainder of them refuse to get well under any treatment until the disease has run its course, and it is for these that some new treatment is required.

AMERICAN ASSOCIATION OF PATHOLOGISTS AND BACTERIOLOGISTS.

The annual meeting of the American Association of Pathologists and Bacteriologists was held at Cleveland, Ohio, March 28th and 29th. The meetings were held at the Western Reserve Medical School, Physical Laboratory of Adelbert College, and at the Lakeside Hospital. Dr. William Howard, of Cleveland, presided. The following officers were elected: L. Hektoen, Chicago, President; James Ewing, New York City, Vice-President; Harold C. Ernst, Boston, Secretary; Eugene Hodenpyl, New York, Treasurer. Numerous papers were read and demonstrations made covering widely different fields of pathology and bacteriology.

Demonstration of Smallpox Lesions.—A most instructive demonstration of the important gross lesions of smallpox was given by Dr. G. B. Magrath and Dr. W. R. Brinckerhoff of Boston. The various types of skin lesions were especially well shown, as well as the laryngeal and renal complications of this disease.

On Submaxillary Gland Tuberculosis.—A paper on this subject was read by Dr. A. J. Lartigau of New York. The literature relating to any form of tuberculosis of the salivary glands is not abundant, and that specifically relating to tuberculosis of the submaxillary gland is limited to less than half a dozen contributions. The writer was unable to find in the literature more than one authentic case in addition to the one which he reported of submaxillary-gland tuberculosis in the human subject. His case was that of a man, sixty-eight years old. From a study of the tuberculous lesion, the author concluded that the infection was an ascending one along the ducts from the mouth. The writer further reported the results of experimental studies. From these he concluded that localization of the infection to the submaxillary glands in cases of general miliary tuberculosis is uncommon. Trauma, however, predisposes to infection.

Relation of Tetanus to Vaccination.—This paper by Dr. Joseph McFarland of Philadelphia related the results of a careful inquiry into the various sporadic and epidemic outbreaks of tetanus following vaccination. Comparison of his tabulated figures shows that within recent years much more tetanus has been reported in the country than in the past. In Germany and France, the writer stated, no cases of tetanus following vaccination had been reported but a few had been observed in England. From his inquiry, especially from his study of one outbreak in Philadelphia, the writer concluded that tetanus has undoubtedly followed vaccination. This emphasizes the necessity for still greater care on the part of manufacturers in the preparation of vaccine virus.

Pathological Anatomy of a Case of Poliencephalomyelitis.—This paper by Dr. Alice Hamilton of Chicago was upon the detailed study of a case of poliencephalomyelitis which occurred in a child. Careful histological examinations of the brain including the pons were made. Various phases of nerve-cell degeneration were observed; particular attention was directed to the perivascular cellular infiltration observed and also to the presence of peculiar bodies having tinctorial variations different from those of amyloid material. The nucleus of the fifth nerve on one side was involved.

Mixed Tumors of the Parotid Glands.—A paper upon this subject was presented by Dr. Francis C. Wood of New York. A portion of the paper was taken up with a discussion of different views relating to the nature and origin of parotid-gland tumors. Considerable attention was given to the conclusions of Volkmann. As a result of considerable study of the subject based upon the examination of many specimens, the writer has been led to believe that a large class of parotid tumors designated endotheliomata belong to the mixed tumor class. He finds that between twenty and twenty-five per cent. of these tumors have in some parts the character of epitheliomata with prickle cells and in other portions the features of endotheliomata. These tumors also often contain cartilage and other heterogeneous elements. From these and certain embryological facts at hand which indicate the possibilities and explanation of such fetal displacements, Dr. Wood concluded that for the most part many of the parotid tumors are of the mixed type, explicable by embryological aberrations.

Studies upon Paracolon Infection.—The paper of Dr. E. Libman of New York contained the report of an infection of this character with the results of bacteriological observations upon the paracolon bacillus isolated. During life the patient's blood gave a well-marked Widal reaction with the bacillus typhosus. The postmortem examination showed recently healed ulcers in the intestines. The organism described as paracolon bacillus and streptococci were isolated. During life the paracolon bacillus was also isolated from the patient's blood. The writer suggests the possibility of secondary infections with the paracolon bacillus in typhoid fever. A comparative study of the paracolon bacillus which he isolated and of others was made and the results recorded. He finds that this organism resembles that isolated by other investigators in more or less similar cases.

On Hypernephromata and Other Tumors of the Kidneys.—This interesting contribution was made by Dr. A. O. J. Kelly of Philadelphia. In drawing attention to this class of tumors which were first carefully studied by Grawitz in 1883, the writer especially emphasized the point of our little knowledge regarding the origin and classification of these new formations. As to the genesis of these tumors there exist at present diverse opinions, the majority of authorities asserting that they are derived from suprarenal tissue while others contend that they are not. From a review of the studies of others and his own investigations, the speaker concludes that hypernephromata are both typical and relatively common new growths of the kidney. Although it seems rather preposterous that suprarenal tumors of the kidney should predominate over new growths of that organ, this predominance is not without analogy to what has been hitherto known relative to tumor formation. The general conclusions of the author are for the most part in accordance with the views advanced by Grawitz and Lubarsch.

Mode of Action of Certain Hemolytic Agents.—Dr. G. M. Stewart of Cleveland read a paper upon this subject. For the most part it related to the action of saponin on blood-corpuscles. He found that the increase of conductivity produced by saponin and formaldehyde on hardened blood is due to the increase in the conductivity of the corpuscles, and not, mainly at any rate, to the liberation of electrolytes from the corpuscles and a consequent increase in the conductivity of the serum. The increase in the permeability of the corpuscles is probably caused by a dissolving or emulsifying action of the saponin on some non-proteid constituent of the envelope or stroma. Heating the blood to 45° C. intensifying the laking action of the saponin so that a dose insufficient to cause laking in ordinary temperatures may do so when the blood is heated to the temperature mentioned. Pus corpuscles, like red-blood cells, are poorer conductors than the serum in which they are suspended. Unlike blood-corpuscles they show no preference for ammonium chloride as compared with sodium chloride. The fixing of pus corpuscles by formaldehyde does not inhibit this action of saponin.

Study in the Transplantation of Tumors.—Dr. Leo Loeb of Chicago in another paper on this subject reported the results of new and original experiments. The principal part of the paper related to the study of the transplantation of a mixed tumor of the thyroid gland of rats. A large series of experiments were undertaken and the general results showed quite conclusively that this tumor could be transmitted in rats. The original features of the tumor were preserved in the newly-infected rats. A very interesting point in connection with this subject was the ability to keep the tumor cells alive for five days and then successfully inoculate them into rats. The other points in connection with this paper were a consideration of the cytology of the cells.

Lesions Produced by the Blastomycetes of Sanfelice and Plimmer.—A report of studies upon this subject was made by Dr. Edward H. Nicholl of Boston. The experimental studies were made on a large number of animals both by subcutaneous and intravenous inoculations. There was also a local reaction at the point of inoculation. For the most part productive inflammation was induced like that observed in granulomata. Lesions in the other organs of much the same nature occurred. The blastomycetes were always observed in the local lesions, generally surrounded by a gelatinous capsule. Lantern slides were exhibited illustrating the main points with reference to the lesions induced.

Blastomycetic Lung Lesions in the Horse.—Dr. L. Frothingham of Boston followed with a paper on this subject. Histological and experimental studies were made and the lesions induced in the inoculated animals were quite similar to those reported by Dr. Nicholl in the previous paper. Lantern slides were exhibited.

Xanthoma.—This paper was read by Dr. W. W. Williams of Boston. A report of histological studies made on this class of lesions was presented. The paper especially considered the subject of the so-called xanthoma cells. From his studies Dr. Williams regards these cells as of connective tissue origin, in which the protoplasm shows more or less fatty material.

Subcutaneous Glioma over the Coccyx.—This paper was read by Dr. F. B. Mallory of Boston. The tumor was a globular mass, small in size, covering the sacrum. It was partly covered with skin and the gross appearance suggested fibro-sarcoma, although histologically the tumor in places resembled carcinoma. The tumor was studied with special reference to the presence of glia tissue by Mallory's new stain. Fine and coarse neuroglial fibers were arranged in a loose or close network, according to the part examined. There was also a considerable amount of connective tissue.

Considering the genesis of these tumors, the author regards them as the result of embryological displacements.

New Methods for Staining Capsules.—Dr. Philip Hanson Hiss, Jr., of New York read a paper on a new method which he had devised for staining the capsules of pneumococci and streptococci. Two methods were given, one for temporary mounts in water and another suitable for permanent mounts. The first method was as follows: Stain with a half-saturated aqueous solution of gentian violet for about a minute, and then wash in ¼-per-cent. aqueous solution of potassium carbonate; mount in water. The second method, which admits of permanent mounts, consists of the following: Stain with 5-per-cent. aqueous solution of gentian violet, and then wash with 20-per-cent. copper sulphate solution; mount in balsam.

Analogy Between Plimmer's Bodies and the Centrosome.—Dr. Le Count of Chicago read a paper on this subject, basing his conclusions upon the study of the archiplasm of cells under different conditions. The speaker drew attention to the close resemblance of the centrosome to so-called Plimmer's bodies, and emphasized the neglect into which this field of investigation has fallen. On the whole, the author does not consider that Plimmer's bodies bear any etiological relation to the causation of cancer.

Relation of Bacteria to the Development of Gall-Stones.—This contribution was made by Dr. Lartigau of New York. The preliminary part of the paper was directed mainly to the consideration of the studies of Mignot, who established by experiments the fact that gall-stones could be experimentally induced in animals by infecting the gall-bladder. The writer then took up his own investigations in this matter. The first step was a study of the growth of bacteria in bile. His conclusions are in accordance with those of others who have investigated the matter, that bile is not bactericidal to the bacillus typhosus, bacillus coli communis, and some of the other pyogenic organisms. Direct inoculation of the gall-bladder with different bacteria was followed by the development of gall-stones. Sterile inert foreign bodies in themselves do not give rise to this condition, although they and stagnation of the bile seem to favor the development of gall-stones in the presence of infection of the gall-bladder. Mixed infections do not seem to induce gall-stones earlier than single ones. From his studies the writer concludes that gall-bladder infection may occur in cases of systemic infection, but he believes that in the human subject the bacteria usually gain access to the liver and gall-bladder from the intestine through the portal circulation. This is especially so when intestinal inflammation is present.

Changes Produced in the Hemolymph-Nodes of the Sheep by Splenectomy.—Dr. A. Scott Warthin of Ann Arbor, Michigan, gave the results of further study of hemolymph-nodes. From his investigations, Dr. Warthin concludes that hemolymph-nodes are concerned in the destruction of red-blood corpuscles. He further suggests that they may have something to do with the development of hemolytic substances. He finds that in splenectomized sheep the hemolymph-nodes occur in much greater numbers than in control animals. Moreover, he believes that fat tissue may be transformed into hemolymph-nodes. He particularly drew attention to the presence of eosinophilic and basophilic cells in the hemolymph-nodes. As to the significance of these cells in these situations, he is unwilling to advance any theory.

On Thrombi Composed of Agglutinated Red-Blood Corpuscles.—This paper was read by Dr. Simon Flexner of Philadelphia. The first part of the communication related to a discussion of the recent work upon hemolysis and agglutinins. The subject of agglutinins with reference to the agglutination of red-blood cells was particularly dealt with. The speaker went on to say that from observations recently made he had been led to believe that agglutinated red-blood corpuscles were in all probability the early factors in the development of thrombi. He studied this from an experimental point of view and concluded from his experiments that this was so. He further suggested that many of the lesions in infectious diseases were in all probability referable to minute masses of agglutinated red cells, the agglutination being induced by substances manufactured by bacteria. He was inclined to the belief that necroses of the liver are in some instances due to such thrombi.

Lymphomatous Tumors of the Dog's Spleen.—Dr. Herbert U. Williams of Buffalo followed with a paper upon this subject. He related his experiments with this class of tumors, eighteen of which he had the opportunity to study, obtained in the course of numerous autopsies on his animals. These are tumor masses which vary from a split-pea to two or three centimeters in diameter, sometimes single, and sometimes multiple; and under microscopical examination bear a very striking resemblance to the spleen tissue proper. The author further made an exhaustive bacteriological study of these tumors, but was unable to isolate any micro-organisms which he considered as etiologically significant.

On the Relation of the Bone-Marrow to Leucocytosis.—This paper was read by Drs. Brinckerhoff and Tyzzer of Boston. It was mainly a consideration of experiments conducted to determine whether or not there was an absolute increase in the number of leucocytes in cases of leucocytosis. The experiments were done upon rabbits, and from the results of numerous studies upon the peripheral and marrow blood, the authors concluded that in cases of leucocytosis there was no absolute increase in the number of leucocytes, the apparent augmentation in the peripheral circulation being due to an outpouring of the leucocytes lodged in the marrow of the bones.

On Segmentation and Fragmentation of the Myocardium.—This paper was read by Dr. A. P. Ohlmacher of Chicago. The first portion of the communication was devoted to a consideration of the recent studies by Hektoen and McCallum. From his investigations the writer was unable to agree with these observers that segmentation and fragmentation of the myocardium was to be considered a pathological lesion. He regards the condition as artefact due to faults in technic. He does, however, admit that in certain diseases these artefacts are much more likely to arise than in others.

Occurrence of Tuberculosis and Carcinoma in the Same Organ or Tissue.—Dr. Harris Moak of Albany read a paper on this subject. He presented reports of five cases in which he had observed the coexistence of carcinoma and tuberculosis. A number of these instances were cases of breast carcinoma and tuberculosis; others occurred in lymph-nodes. The author does not agree with those writers who claim that there is an antagonism between these two lesions. He brought forward statistics to show that tuberculosis is often present in individuals suffering from carcinoma.

A Case of Multiple Fibroma of the Nerves of the Lower Extremities, with Diffuse Enlargement of the Sciatics.—This paper was read by Dr. John H. Larkin of New York. In a preliminary review of the literature since the first paper by Cheseldon, in 1740. he referred to the many studies which had been made upon this subject since that time. Mention was especially made of the recent summary by Plebe and Hektoen. Altogether when the reports were critically reveiwed the writer was able to analyze some seventy cases of these so-called multiple neuromata. The occurrence of sarcoma in connection with multiple fibroma has been recorded by Recklinghausen and several others. The case reported by the writer belongs to this class. The subject was a female, aged twenty-four years, who had a large tumor on the posterior part of the right thigh and also a smaller but similar tumor on the posterior part of the left thigh. The autopsy showed more or less atrophy of the muscles of both extremities, and the nerves of the lumbo-sacral plexus on the right side showed marked enlargement from their exit in the spinal canal to their junction to form the great sciatic. The nerves, especially the internal popliteal and posterior tibial, were specially affected. For the most part, the great sciatic and its branches seemed to be of uniform thickness throughout. The epigastric, sympathetic, cervical and brachial plexuses showed no changes nor enlargement of their branches. No notable changes were found in the viscera with the exception of the lungs, in which numerous larger and smaller tumors of a gelatinous appearance were present. Microscopical study of the enlarged nerves on both sides revealed the lesion as a multiple fibroma with complicating sarcoma and with metastases of the lungs. This case is of special interest as showing the bilateral sarcoma associated with multiple neurofibromata.

Influence of Potassium Cyanide in Living Protoplasm with Reference to Bacteria.—Drs. F. P. Gorman and R. W. Tower of Providence read a paper on this subject. The experiments reported were suggested by the work of Prof. Loeb on parthenogenesis with the sea-urchin. Prof. Loeb in his experiments concluded that potassium cyanide was in itself an agent stimulating cell growth; but Drs. Gorman and Tower from their experiments give a somewhat different interpretation of the facts recorded by Prof. Loeb. They believe that the difference lies in the fact that potassium cyanide is more or less germicidal to bacteria present in sea-water which was used in the experiments on parthenogenesis, and that the earlier decay of the embryos in the sea-water not containing the potassium cyanide was chiefly due to the fact that the micro-organisms present in this water started earlier putrefactive changes, which did not occur so readily when potassium cyanide was added, owing to its germicidal properties.

A Study of the Bacillus Diphtheriæ and Allied Organisms.—Dr. William H. Park of New York read a paper covering this subject for Dr. Anna H. Williams of New York. This investigation was based upon the study of many cultures obtained under a variety of conditions. It was found that all the varieties of micro-organisms studied grew well on acetic broth, even in the presence of other bacteria. This medium was therefore used throughout the experiments. The true diphtheria bacilli were studied under different conditions in different culture media, and although great variations among the individual bacilli were observed, certain morphological characteristics always predominated; and these remained fairly constant for a number of culture generations, and also in successive cultures taken from the same case, when the same culture medium was used and cultures of the same age examined. Two broad groups could be recognized, in which those cultures having the distinct characters of one group differed widely from those having the distinct characters of the other group, while between these extremes there were many gradations in type. It was suggested that a practical application might be made of the fact that there is a permanence of the predominating type in each culture, from the same case, in helping to trace the sources of infection. Another practical point is that when typical bacilli persist in a patient after convalescence from an attack of diphtheria, there is very little need of testing the virulence of such bacilli. Dr. Williams was unable by experiments to convert true diphtheria bacilli into bacilli having the characteristics of pseudodiphtheria, nor was she able to convert pseudodiphtheria bacilli into true diphtheria bacilli.

BOOK REVIEWS.

Transactions of the American Gynecological Society. Volume 26. 1901. Wm. J. Dornan, Philadelphia.

The great number of interesting articles contained in this volume of the Transactions makes it more than a mere book of bound reprints, as is the case in the majority of such publications. Dr. Matthew D. Mann and Dr. J. W. Bovée have contributed two especially interesting papers on the removal of the female bladder and the statistics in transplantation of the ureters, respectively. Howard A. Kelly's article on the diagnosis of stone in the kidney by means of wax-tipped catheters and the general discussion on Cesarian section should prove a source of much that is interesting to the gynecologist or obstetrician. The success in the latter procedure seems to show that the majority of gynecologists throughout the country are finding more indications for it and that they apparently consider it as safe as the ordinary laparotomy. All report favorable results both for the mother and child. Dr. Henry C. Coe reports two cases of tetanus following aseptic celiotomy and gives a résumé of the literature on this subject. Of recent years very few such cases have been recorded and the author thinks that it is in reality because of the extreme rarity of the disease. Among the other contributors to this volume are the following: Drs. E. Van de Warker, C. D. Palmer, W. H. Wathen, Philander A. Harris, E. C. Gehrung, G. H. Engelmann, Cyrus A. Kirkley, H. T. Byford, Geo. M. Edebohls, Hunter Robb, Eugene Boise, J. Whitridge Williams, Charles Jewett, H. D. Fry, J. D. Emmet, A. F. Currier, and many others.

An American Text-Book of Pathology. Edited by Ludvig Hektoen, M.D., Professor of Pathology in the Rush Medical College and David Riesman, M.D., Professor of Clinical Medicine, Philadelphia Polyclinic. W. B. Saunders & Company, Philadelphia and London.

This is a noteworthy addition to the American Text-Book Series. In all it is the product of the work of nineteen authors, each well known in his respective branch. Of the 1,245 pages, 444 are devoted to general pathology, the rest to special pathology. Dr. L. F. Barker contributes the General Introduction, Dr. Hektoen writes on General Morbid Processes, Dr. Ohlmacher on Tumors and Pathogenic Microparasites, Dr. L. J. Mitchell on Animal Parasites, Dr. V. C. Vaughan on Intoxications, Dr. W. S. Carter on the General Pathology of Fever, and Dr. H. F. Lewis on Teratology.

Of these general chapters, the Introduction and those on General Morbid Processes and Pathogenic Microparasites are most complete and recent. The chapters on Special Pathology serve their purpose most commendably.

The book as an entirety is a most excellent one for students. It is didactic enough to be instructive and sufficiently suggestive of the unknown problems to be stimulating.

Photographic Atlas of the Diseases of the Skin. By George Henry Fox, A.M., M.D. Parts VIII. and IX. J. B. Lippincott Company, Philadelphia and London.

The diseases treated of in these parts are as follows: Part VIII., Chloasma, Chromophytosis Diffusa, Psoriasis Circinata, Lichen Planus Hypertrophicus and Tuberculosis Verrucosa.

Part IX., representing the first part of the second half, for the Atlas is to be finished in sixteen parts, contains illustrations and descriptions of Herpes Faciei, Lupus Exedens, Syphiloderma Tuberculosum, Ichthyosis and Keloid.

We have commended this work in unmeasured words of praise and feel that every physician who expects to see much or little of skin diseases should avail himself of the opportunity of securing this work. It will never grow old and will ever be a source of information and satisfaction.

Diseases of the Intestine. Their Special Pathology, Diagnosis, and Treatment. By John C. Hemmeter, M.D., Ph.D., Professor in the Medical Department of the University of Maryland. In Two Volumes. Vol. I. P. Blakiston's Son & Co., Philadelphia.

The author of this monumental work, for such it is in size and in value, stands in the foremost ranks of specialists devoted to this branch of medicine. To his task he has brought rare discrimination, unexampled diligence and wide faculties and the result is a "classic." This can readily be said, although but one volume is before us. The completed work but makes the undertaking more praiseworthy.

Than is the study of diseases of the intestine, no group of disorders is more in need of thorough overhauling and revision. The result is a splendid work and reflects great credit on author and publisher alike.

Certain chapters have been written by Dr. Hemmeter's associates, thus the Anatomy and Histology of the Intestines is from Dr. J. Holmes Smith, The Examination of the Feces and Urine by Dr. Henry Alder, Intestinal Bacteria by Dr. W. R. Stokes, while the chapter on Diseases of the Rectum has been contributed by Dr. T. C. Martin of Cleveland, all able collaborators.

It would be impossible within the accorded limits of a review to catch up and discuss the new points alone that Dr. Hemmeter has introduced here for the first time. The book is a storehouse of useful information bearing on a very dark chapter in human pathology. We wish it the success, both temporal and lasting, it so richly deserves.

The Elements of Physical Chemistry. By Harry C. Jones. Associate Professor of Physical Chemistry in the Johns Hopkins University. The Macmillan Company, New York.

The extraordinary strides which have been made in most avenues of research during the past fifteen years have been reflected in the origin, growth and perfection of an almost entirely new branch of knowledge. Physical chemistry, intermediate between chemistry and physics, almost unknown to the older generation of chemists, is a lusty young science which is opening new doors on old secrets and promises to reveal the secrets of Nature.

The present volume is the best résumé thus far appearing in the English language. It will be invaluable for the student of modern chemistry and indispensable for the advanced worker in the fields of physiological and pathological chemistry; for those who would understand the complicated studies of modern bacteriology, with its problems of immunity, hemolysis, and phagocytosis; for the student of pharmacology who would unravel the problems of irritability, of the interrelations of chemical structure and physiological action; for the physiologist who would comprehend the character of the nervous impulse or the relationship of secretion to cell activity and vascular supply. These and other practical questions are to be answered only, we believe, by the study of this new branch of knowledge and we welcome this excellent introduction.

Vier Vorlesungen aus der Allgemeinen Pathologie des Nervensystems. Von Dr. Frederick W. Mott. Uebersetzt von Dr. Wallach. J. F. Bergmann, Wiesbaden. G. E. Stechert, New York.

These lectures were delivered before the Royal College of Physicians of London and now appear in German dress. They richly deserve the compliment of translation into other languages and in the present instance the work has been very commendably executed.

Arbeiten aus der Pathologisch-Anatomischen Abtheilung des Königl. Hygienischen Institut zu Posen. By Professor Dr. O. Lubarsch. J. F. Bergmann, Wiesbaden. G. E. Stechert, New York.

Our German confrères are to be congratulated on European conditions in many respects, but in none more than that it is possible to publish in neat and attractive form contributions of which the present volume is a type. The price of publishing in this country makes it almost impossible to offer to the scientific world the united results of our own laboratory workers in such endurable and praiseworthy a manner.

The contents also deserve special consideration. The opening 60 pages give a recapitulation of the pathological work of the Institute. This is followed by contributions on Melanotic Tumors, by Dr. Larass; Psammocarcinoma of the Uterus, by Dr. A. Stieda; Pathology of the Suprarenals by Dr. E. Rosenstein. The Action of the Tubercle Bacillus Group on Frogs by Drs. O. Lubarsch and H. Mayr, Questions of Metaplasia by Drs. K. Pollack and O. Lubarsch, Pathological Anatomy of Ventricle Ependyma by Dr. K. Jeremias, and a number of others.

The volume is one made up of interesting and instructive contributions both to the student and worker in pathological problems.

Internationale Sehprobentafel für Kinder. Von Dr. Ernst Heimann, Augenarzt in Berlin. Price, 2 marks. Fischer's Medicinische Buchhandlung, Berlin, 1902.

This vision test-card consists of the black silhouette hand and index finger, pointing in various directions at different parts of the chart. The size of the hand corresponds to Snellen's valuations in meter angle. The author addresses this chart to the lowest form of a child's intelligence—the claim of merit in the new device. Arranged on a folder having four pages, it is convenient to handle and does not disclose itself all at once to confuse, or to lend itself to deception.

BOOKS RECEIVED.

The Medical News *acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the* Medical News *will shortly appear.*

Human Embryology and Morphology. By Dr. Arthur Keith. 8vo., 324 pages. Illustrated. Longmans, Green & Co., New York.

Arbeiten aus der Pathologisch-Anatomischen Abtheilung des Königlichen Hygienischen Institut zu Posen. By Dr. O. Lubarsch. 8vo., 277 pages. Illustrated. J. F. Bergmann, Wiesbaden; Stechert, New York.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

Vol. 80. New York, Saturday, April 19, 1902. No. 16.

SPECIAL ARTICLE.

COMPULSORY VACCINATION ESSENTIAL. THE EXAMPLE OF PORTO RICO.

BY AZEL AMES, M.D.,
OF PORTO RICO;
LATE MAJOR AND BRIGADE SURGEON, U. S. V., COMMANDING U. S. VACCINE CORPS AND DIRECTOR OF VACCINATION DEPARTMENT OF PORTO RICO.

The prevalence of smallpox during the last few months over the entire territory of the United States (except parts of its newly-acquired insular demesne) and its considerable coeval increase in Great Britain are highly significant and challenge especial attention, both as to the causes of these outbreaks and the means for their suppression. Both of these subjects present new and highly interesting features, and no study of the care and control of the disease can be either complete or effective which fails to take note of certain influences which have been potential for the first time, either absolutely or in degree, in spreading it rapidly and widely over both countries.

Among the new notable features of the epidemic in the United States (for such it soon became) are the exceptional rapidity of its march; the resulting coincidence of the disease in all parts of the country, unparalleled in previous experience; the increased percentage of infant mortality over that of recent years; the practical exemption from the disease of certain parts of our new insular domain, especially those nearest us; and the new agents and practices which have become elements of vaccination, long recognized the world over as the sovereign power in the prevention, control and modification of variola. The first three of these are equally noticeable in the outbreak in Great Britain, the third especially, though the first two would be, of course, of comparatively little significance, owing to her very small area, if it were not that her superior system of sanitary control has hitherto enabled her to keep well in hand the spread of this disease.

To call attention to the new and grave causes which have been largely responsible for the occurrence, to the quick march and the general spread of the present epidemic, and to its large infant mortality; to point out the steadily increasing power for harm of these causes, the imperative necessity for quickly removing such as we can, and of setting up every possible safeguard against the rest, are the purposes of this article.

A hasty consideration of the chief causes of this outbreak and their operation, as directly connected with the measures to be applied to its repression, prompts the following suggestions.

a. Epidemic cycles of the disease in any country, since the introduction of inoculation, and especially of systematic vaccination, doubtless sustain a more or less definite relation to the susceptibility of each generation, or, in other words, to the material for the disease to feed upon existing in it. In proportion as the unprotected, the non-immune element, whether that which has outworn its vaccine protection, or that which has never yet had any, increases in volume and is exposed to sources of contagion, or the reverse, the cycle intervals seem to shorten or lengthen. Until lately their almost uniform tendency has been to lengthen, but at present, owing to new and potent influences hereafter considered, this is reversed and these influences, so far as they have had scope, have beyond doubt borne a principal part in bringing about the present alarming outbreaks in both countries, especially in England. A much lessened protection and greatly increased opportunities of exposure to contagion are evidently, then, the determining influences, under which all lesser ones group themselves, of the present prevalence of variola at home and abroad.

Of the first of these, a lessened protection, there has been in Great Britain for the past four years a sad and powerful illustration and experience, the influence of which has already reached these shores, and the examples and effects of which have been most pernicious everywhere and are cumulative. After enjoying for more than a century the high honor of having given to the world, through the immortal Jenner, the untellable benefits of vaccination, having been able always to boast the best health administration, and being the beneficent pattern in sanitary legislation and conduct to all other people under the sun, Great Britain four years since enacted a modification of her "compulsory vaccination law," introducing what is known as the "conscience clause," whereby any person claiming conscientious convictions as to the baleful effects of vaccination is exempted therefrom. It is safe to say that no such step backward in its relation to the physical well-being of mankind has ever been taken by any enlightened nation and already its maleffects are seriously and painfully apparent. For the originators and givers of this great boon to mankind thus to discredit its value and throw doubt upon its beneficence was a blow to humanity and an encouragement to the ignorant, prejudiced and irresponsible, the cost of which can never be computed, but has already reached fearful figures. The larger percentage of infant mortality from variola and the very large falling off in revaccination already recorded in England are due, beyond a doubt, almost wholly to this relaxation of protective measures. The increased doubt and distrust naturally created in this country by the action of the British Parliament has unquestionably been responsible for the neglect of thousands to seek the protection of vaccination and revaccination for themselves and their children, from which neglect have already certainly sprung disease, distress and death.

b. The unfamiliarity of the present generation of physicians with the disease clinically. The fact is that, in this country at least, by far the larger number of physicians have never seen a case of smallpox or varioloid, from which unfamiliarity numerous errors of diagnosis and consequent exposure of many to the disease have occurred.

c. The fancied security and the consequent relaxed vigilance and loosely-enforced protective regulations, both of sanitary and school authorities, induced by long periods of immunity from the disease, especially as related to the inspection of tenements, etc., and the systematic vaccination of school-children and operatives.

d. The growth, with the diffusion of general intelligence and means, of a more self-assertive and mistakenly aggressive individuality, which, until more fully informed, often resents and resists the idea of any legal control of, or interference with, one's personal liberty, and, lacking full knowledge, is credulous of all bugbears and distrustful of all vaccination, lymph, and other sanitary means and measures to suppress the disease. It is this half-informed, but very active opposition which has made possible in England the practical overthrow of compulsory vaccination and which has led to the wide neglect of and opposition to vaccination existing with us and seriously threatening our own protective legislation.

Among the more important of the second group of prime causes of the epidemic mentioned, the greatly increased opportunities of exposure to the disease,* must be counted:

a. The recent unexampled periods of industrial activity in which the great textile factories and other "behives of industry" have been unwontedly full, and in which single sparks of contagion readily light the rapid and wide-spreading fires of an epidemic.

b. The unprecedentedly great and constantly increasing facilities of street-railway, railroad, and other communication in cities and towns, and between industrial and commercial centers; and the recent and growing habit of operatives of all classes of frequently shifting back and forth between these centers. This, indeed, is but a small fraction of the mighty ebb and flow of travel between all sections, or of that between this and other countries, never so great as of late, all affording every opportunity for the transmission of disease.

c. The increased use in all populous communities of public conveniences and of general dependence on the part of all upon common sources of domestic utility, such as laundries, barbers, baths, lavatories, bakeshops, and upon milkmen and other vendors, constantly passing from house to house.

d. The enormous growth and gatherings of public assemblies at churches, theaters, etc., and especially of the public schools, which in spite of some precautions used are in many communities perhaps the most active and effective disseminators of disease.

Setting aside the probable cycle tendency of each generation mentioned and the presumable effects of congenial atmosphere and kindred conditions as admitted factors in every considerable recurrence of variola, the other influences briefly mentioned, new in themselves or in their proportions, must be held largely accountable for the invasion, the celerity of movement and the wide and unprecedented coexistence of the present epidemic. That they are just such influences as must inevitably precipitate such results is certain; that they have done so is matter of competent testimony, observation and comparison.

The recent notable increase of infant mortality from variola in Great Britain was to be expected as the most immediate and logical sequence of the overthrow of compulsory vaccination and must be regarded as but the forerunner of a like increase among the adult population, if the "conscience clause" of the British "Vaccination Act" be not speedily repealed. This increase is likely to be manifest as soon as the vaccine protection now existing in the passing generation ceases and the lack of it (from refusal "under the conscience clause" to be vaccinated or revaccinated) in this and succeeding generations shall permit.

The practical exemption of Cuba and Porto Rico, especially the latter, from this epidemic of variola is strikingly interesting and significant. Both these islands have always been under Spanish rule, notoriously deficient in sanitary regulations, hot-beds of variola in which the mortality, as might be expected where only the most spasmodic and ephemeral regard for vaccination existed, has constantly been very high. They are both in closer touch with our shores than ever before. With smallpox always more or less active, the average death-rate in Porto Rico, for the ten years prior to the American occupation, as ascertained from Spanish vital statistics, was 621 per annum and the constant presence of the disease and its high mortality had apparently come to be accepted as inevitable. To-day the annual death-rate does not exceed 2, in a population of 960,000; the disease is practically non-existent on the island and has been since the general compulsory vaccination of 1899.

While, as indicated, the discreditable overthrow of compulsory vaccination in Great Britain has negatively attested, on the one hand, by the disastrous results which have followed, the value and necessity of its protection, the United States has, on the other, to its high honor among the nations, furnished in its "new possessions" the positive proof of the absolute power of well-conducted vaccination to control and eradicate smallpox. Never was antidote more opportune to overcome the bane; never counter-stroke to a blow more effective than the compulsory vaccination of Porto Rico and its grand results, as answer and more than offset to the blunder of the British Parliament. Hardly had the last of the representatives of Spanish misrule turned their backs upon the island before the American military administration, though wholly new to the science and are of colonial government, set on foot, as an act of beneficence to the newly subordinated people, the vaccination of the entire population, and the production in the island itself of the requisite bovine virus.

Porto Rico in Evidence.—The American army under General Miles landed in Porto Rico in July, 1898, and gradually occupied the island, working eastward, westward, and northward from Guanica, Ponce, and Arroyo on the south coast, until it was in full possession. The last of the Spanish army and its adherents left the island in October, 1898, and General John R. Brooke was established as American Military Governor at San Juan, the capital. A considerable naval squadron, a much larger fleet of army transports, quartermasters' vessels, etc., a Spanish army of some 11,000 fighting men and attaches and the American army of 8,000 men and adherents had meantime doubtless contributed each its quota to the grand total of cases of variola, always more or less prevalent among the population during the Spanish régime. In some of the principal places, such as Ponce and San Juan, the local health authorities had kept up a desultory, but altogether ineffectual oversight and partial isolation of the disease, with a feeble effort at vaccination, apparently not so much with the idea of attempting to eradicate the disease, as to keep it somewhat in check, yet sufficient to furnish business to the local medical practitioners and excuse for the existence of the health officer and his salary.

Under the more or less efficient supervision soon established by the United States military authority, this local oversight and control were sufficient to accomplish, for a time, a considerable degree of repression of the disease in the chief places. Practically unchecked, however, in the outlying villages and the hill-country and aided by the peregrinations of the unsettled inhabitants and troops, it steadily took on greater proportions, no part of the island being free from it, until nearly all the country barrios (precincts) were infested and its reflex tide began to work back into the larger towns and cities. For the first time in the cognizance of American sanitary officers, the spectacle was presented of the non-populous regions feeding the disease to the cities and towns, a condition of things which it will readily be seen greatly increased the difficulty of control. Where, as in the United States, the usual primary centers of the contagion are a few large cities or manufacturing towns, the task of restricting it is obviously much

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*The vaccination by the steamship companies *en voyage* or on arrival is most perfunctory and valueless, 600 or more often being "run through" in a few hours, recklessly by one or two physicians.

easier and its spread is much less rapid than when a score or two of small and scattered communities, without sanitary regulations, are sending it daily to the market-towns and cities about them. It was therefore not only a fast-spreading and, indeed, general diffusion of variola throughout the rural population of Porto Rico, with but little less activity in the cities and towns, embracing altogether nearly a million souls, that confronted the American military authorities at the opening of the year 1899; but the conditions favoring its spread and hampering the only measures which could be effective in controlling it were quite exceptional, some of them creating difficulties seemingly almost insurmountable. Among the factors especially favoring the spread of the disease were (1) the tremendous headway it had already attained and the numerous centers of contagion existing; (2) the comparative indifference to it on the part of the mass of the native population, so long habituated to it that it was apparently regarded as inevitable and irremediable; (3) the absence of systematic sanitary authority, oversight or regulation, and hence the maximum of difficulty in ascertaining the whereabouts of cases; (4) the antipathy of the natives to removal from their own homes to hospitals or camps, for isolation and treatment, leading to habitual concealment of cases both in country and town; (5) the unusual facility afforded the spread of the disease by the density of the population, its overcrowded habitations and its "hand-to-mouth" habits of living compelling constant passing to and fro between country and town with or for supplies; (6) the very congenial climatic conditions, and (7) the uncleanly character of the habitations and their surroundings, of the air, water and food commonly used, and of the habits of the people.

Among the conditions exceptionally hampering the only known measures of restriction and control, were (1) the great difficulty of furnishing isolated care and treatment in pest-houses and camps for the hundreds of cases simultaneously occurring, owing to the great and inaccessible area over which they were spread, the inadequacy of transportation, there being often no roads, and the paucity of help; (2) the absolute impossibility of isolating the stricken in their crowded and thickly-set homes; (3) the very small number (proportionately) of physicians and medical apprentices to the population; (4) the very great difficulties of travel in the hill-country and hence the inaccessibility of a large part of the people, either for treatment or for vaccination; (5) the seeming impossibility of procuring any considerable supply of proper vaccine virus, on account of the distance of the ports of the United States, from which alone it could be brought in any quantity, and the attendant cost; (6) the difficulty of preserving the virility of the virus in its passage to the Tropics and after its arrival, it being found that very little virus sent from "the States," especially the glycerinated, retained its efficacy when received; (7) the great difficulty, even with plenty of virus, of vaccinating these hundreds of thousands of unregistered people, mostly ignorant and scattered, speaking foreign tongues, and unused to sanitary control.

The only conditions exceptionally favorable to the suppression of the disease were (*a*) the fact that as the population was insular the spread of the variola was limited by the sea-boundaries; (*b*) there were ample authority (civil and military), men, means, and material to work with; (*c*) the supply of young cattle for the production of virus was large, easily gathered and of excellent quality; and (*d*) a large percentage of the adult population had already had the disease, lessening the number requiring vaccination and the amount of fuel for variola. Private enterprise had, under the stimulus of Spanish municipal contracts, kept feebly alive two very small farms for the production of bovine lymph, but both were nearly moribund at the American invasion, and no reliance whatever could be placed on either the amount or the character of their "out-put." Every effort at general vaccination made by the Spanish authorities had broken down, chiefly from lack of virus, purpose and vim.

The Proofs Positive.—The value of any statement lies in its import and its accuracy, as the importance of any achievement lies in its benefits to mankind. The requests from all parts of this country and abroad for information as to the inception, organization, conditions, conduct, and results of this exceptional campaign against smallpox have been many. Its importance as conclusive proof of the entire efficacy of vaccination in stamping out that disease, even under the worst and most difficult conditions, is self-evident and beyond computation. There have been—as is apt to be the case where great success is won against great odds—conflicting claims for the honors of the achievement. As is usually the case, too, these honors were divisible, different ones having different entitlements, and happily there were honors enough "to go round," despite some attempts to appropriate unfairly. It is to cover and establish, with some degree of exactness and authority, the several points and factors above mentioned that the following details of official action and the sequence of events as recorded are here so carefully stated.

Early in December, 1898, General Brooke was relieved; General Guy V. Henry, who was especially interested in sanitary matters, became Military Governor and a strong hand took the reins. In his report of June, 1899, Lieut.-Col. Hoff, then Chief Surgeon of the Department of Porto Rico, credits himself with announcing upon his arrival in October, 1898, "a desire to untake the vaccination of the population of the island," although he states that the disease was then endemic only; elsewhere he fixes the date of the expression of his "intention," as privately made about November 15th of that year. Neither "desire" nor "intention," however, took formal shape, or bore fruit, and in a letter to the Adjutant-General of the Department, as late as November 23, 1899, the Chief Surgeon contents himself with recommending the thorough "vaccination of all the United States troops in the island." This, indeed, was all that army medical authority could properly consider, except as specially assigned to civil sanitary duty. In fact, Colonel Hoff was later twice reproved by the Surgeon General of the Army, though the latter was friendly to the undertaking, for using the men and material of the Army Medical Corps in the general vaccination ordered by General Henry as Insular Governor, because it was a civil affair. Col. Hoff also states in his (1899) report that, in a letter of December 19, 1898, to the Adjutant General of the Department, he recommended that "the necessary steps be taken to have the people of the island vaccinated," etc. Ten days later, General Henry "on his own motion," as he writes, evidently never having seen this recommendation of his chief army medical officer, but "because of the intelligence received from the *Alcaldes* of different parts of the island of the rapid increase of the disease," directed the promulgation of an order, by "Circular" of his chief civil officer, the Secretary of State, to the several *Alcaldes* (mayors), requiring them as civil officers to carry out universal vaccination. This purely civil order was reinforced January 3, 1899, by a military "General Order" (No. 1, Par. 2 c. s. of the General Commanding, though addressed expressly to the *Alcaldes* and boards of health. This "order" indicates how very difficult it sometimes was to keep distinct in thought, speech, and action the military and civil functions of the Military Governor, in whom, for the first time in the history of the United States under such conditions, they were so peculiarly combined, each interest having independent existence and recognition, independent sources of revenue* and a full, independent official staff.

It is at this point therefore, though only to the extent of the promulgation of civic instructions through a military order, that there first appears an Army relation to the great vaccination work later borne principally on Army shoulders. Always in name, a civil undertaking; carried on under the direct local supervision and coöperation of the several *Alcaldes;* paid for chiefly out of Insular and municipal funds, though in part by the military chest, it was organized and directed wholly by medical officers of the Army and largely executed by them and the men of the Army Medical Corps. To the great credit of both military and civil officers it may be said that there was at no time any considerable friction between them in the discharge of their duties.

On January 7, 1899, as the apparent result of a conversation with the writer, the Chief Surgeon sent the following communication to the Surgeon General of the Army: "In order to make effective the Chief Surgeon's recommendations [?] that everyone in Porto Rico be required to be vaccinated, the Commanding General has issued an order directing that this shall be done. A vaccine farm is now [?] being organized under the immediate direction of this office [?] by Dr. Azel Ames, Acting Assistant Surgeon, U. S. A., and it is believed that all the virus necessary to vaccinate the entire population can be produced at a small cost." These statements were, to say the least, in advance of the truth.

General Henry, a man of strict veracity, states that his original order for general vaccination, sent to the *Alcaldes* through the circular of the Secretary of State and of which all later ones were chiefly confirmatory, was issued by him entirely on his own motion, through fear of an epidemic, created by the intelligence received from the *Alcaldes* themselves and without knowledge of any suggestion of his chief medical officer. The medical and sanitary functions of the latter, the General held, were properly confined to the troops, except as otherwise specially assigned, while it was his declared purpose that the civil sanitary work should be conducted by the *Alcaldes,* local boards of health and the composite health board, with general insular powers, created (by General Order No. 37), Dec. 28, 1899, the day previous to the issue of the "Circular" of the Secretary of State. Of this Insular Board of Health the General unwisely, in the writer's opinion, declined to make his Chief Surgeon a member.

The criticism of the Military Governor expressed by the Chief Surgeon to the writer on this same date, January 7th, for issuing the circular order for general vaccination "before he knew where he could get his virus and what it would cost," the Chief Surgeon expressing the opinion that "it would cost $100,000 to get it from the States and be of little value when got," the writer, reducing this to $60,000, seems to confirm the statement of General Henry that the thought and purpose of universal vaccination of the island were his own, and hence to determine his right to the honor of originating the great work. The facts seem also clearly to indicate that the Chief Surgeon did not consider the undertaking feasible with virus from the United States, as stated in his report of 1899, pp. 4-18, and it is certain he had no thought that the necessary virus could be produced in the island until proposed by the writer. The facts surely do not justify the claim of Colonel Hoff made in his own behalf, in the Philadelphia "Medical Journal" of April, 1900, where he says: "The work of vaccinating the entire population of a country, which was inaugurated here (Porto Rico) by the writer," etc., nor can such claim be successfully maintained as against that of the late General Henry.

On the evening of January 7th, at the urgent request of Colonel Hoff, the writer sought the Commanding General and first made the suggestion, already given Colonel Hoff, that the virus be produced in the island. The suggestion was warmly approved as soon as fully understood, the General saying as the writer left, "I will give you all the authority you need, all the men you need and all the money you need, if you will give me that virus and give it to me soon." These promises he fully redeemed.

From the foregoing it is evident that in writing to the Surgeon General on January 7th, "A vaccine farm is now being organized" (it was but that evening suggested to the General Commanding) the wish of the Chief Surgeon was father to his thought, a fact proven by the dates of the successive orders relative to the Vaccine Station and farms at Coamo Baths, which dates become of importance in the history of the undertaking and determine the time occupied in "wiping out" the disease.

Late on Saturday evening, January 7th (and so constructively on the morning of January 9, 1899), the writer received the verbal orders of General Henry (afterwards confirmed as of this date, by S. O. No. 13, Department of Porto Rico), to proceed on his own suggestions with the preliminary inquiries incident to the creation of the vaccine plant. Hence the statement of the 7th, made to the Surgeon General, "A vaccine farm is now being organized under the immediate direction of this office by Dr. Azel Ames," etc., hardly comports with the facts, as until January 26th, everything done in this connection was by direct order of the General himself, who took from the first the keenest personal interest in the project. Having received the above verbal orders, the writer reported to Colonel Hoff the results of his conference, also urging that the oversight and direction of the vaccination should be placed in charge of the Chief Surgeon of the Department, as the liberal use of the Army Medical Corps and the free use of Army men and material would be absolutely necessary to success. To this proposition the General, after a time, gave a reluctant assent, premising that it must be an Insular (civil) undertaking, conducted through and in coöperation with, the *Alcaldes,* though having from the Army all possible assistance.

As the result of this report and to secure the requisite orders, the Chief Surgeon sent on January 9th the following communication to the Adjutant General of the Department.

"Sir: I have the honor to recommend that a sufficient amount be allotted from the civil funds to permit of the immediate starting of a vaccine farm here, to render effective the order requiring universal vaccination among the people of the Island; and that Dr. Azel Ames, Acting Assistant Surgeon, be placed in immediate charge of the work." The *practical* inauguration of the vaccination of Porto Rico seems to have dated with the proposition to produce the requisite virus in the island.

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*It is an amusing and interesting fact, illustrating for the thousandth time how often little would be accomplished by the "men in the field" if obliged to wait for "orders from the seat of Government," that, although the permission of the War Department was given General Henry March 30, 1899, reaching the island April 6th, for the expenditure of $30.000 from the insular fund in the work, he had long before assumed responsibility; on the latter date 19,200 virus points were charged from the cattle at the farms and transmitted to the vaccinators then at work in all parts of the island, as they had been for weeks, while the very sage advice of the then Assistant Secretary of War, as to the conduct of operations, had long been anticipated and greatly improved upon. In fact, the authority at Washington was not at any time of more than trivial assistance, though its interferences were several times most embarrassing, as in the sudden and peremptory discharge of trained men; the furnishing of poor (initial) virus; delay in the transmission of supplies, etc. Had success depended upon this authority it would never have been realized.

Having selected the field of his cattle operations (the equilateral triangle of fine cattle-country having its apex at Coamo Baths and for its base-line the south, Caribbean, shore of the island, stretching eastward from Ponce some thirty miles); having chosen his immediate assistants and largely perfected the working plans for the production of a million vaccine points, the writer reported the same to the General Commanding and after a long conference with the Chief Surgeon over plans of vaccination organization, etc., asked for the issuance of orders putting the entire work into its essential relation to the military authority, and under the general charge of the Chief Surgeon.

On January 26th and 27th orders were issued carrying the organization agreed upon by Colonel Hoff and the writer into effect. The General Order (No. 7)* of January 27th reaffirmed the previous orders, civil and military, directing universal vaccination, placing the work under military supervision and conduct, though under civil auspices and the conjoint control of the *Alcaldes,* the great, earnest, organized campaign against the fast-spreading epidemic was begun. The working forces were soon in the field and from this date the work never stayed until it ceased, because completed, on July 1st, just five months later, the population vaccinated, the disease literally "starved out" and driven from the island.

The Virus Production.—The Chief Surgeon (Colonel Hoff) in his report of 1899, has truly said: "To produce the virus a vaccine farm was necessary; to introduce it into the arms of several hundred thousand people required a subdivision of the island and the assignment of Directors, etc. * * * * But the infinite detail of the work and the herculean labor, mental and physical, entailed in carrying it to a successful result cannot be appreciated by those who have never had a like undertaking to accomplish."

To create the virus was, of course, the prime necessity. The grand scale on which the operations were conducted, practically in the open air, in a new country, by unskilled hands, the speedy accomplishment and the unparalleled success, perhaps entitle this part of the undertaking to more than passing notice. After a thorough inspection of every feature of the Vaccine Station and farms, General J. C. Breckenridge, Inspector General of the United States Army, wrote (report, 1899, to the Major General Commanding the Army, p. 68): "On the morning of the 23d [March] we examined the Vaccine Station under the charge of Dr. Ames at the Baths of Coamo. * * * It seems one of the best energized and organized and, despite the considerable difficulties, the most successful and thorough undertaking that has characterized the American occupation." To establish and keep in full operation the Distributing Station of the United States Vaccine Corps and the adjacent cattle farms indeed demanded the exercise of much judgment, careful planning, effective organization and hard work. To get together the requisite number (1,240 head) of young cattle as needed, to handle successfully, select, test, feed and use them, at minimum cost and loss, in a strange country and with green hands, presented a series of practical problems each of which afforded ample scope for every faculty and acquirement. The detailed story of the accomplishment of each would furnish a set of picturesque sketches of men, incident and environment replete with interest, but not essential to our present purpose.

It was first of all necessary to secure the supply of young cattle without great cost, which would of itself have been prohibitive, to locate them conveniently and subsist them for a considerable period; to procure from the United States, 1,800 miles distant by sea, the best possible lymph with which to vaccinate them, together with the appliances needful for vaccination (ivory points, packing material, etc.) and for pathological tests (tuberculin, syringes, etc.). It was equally necessary to organize, fully equip, house and subsist a corps of over one hundred men, with expert pathologist, physicians, cattle experts, assistants and teamsters; to arrange for regular supplies of all kinds; for large numbers of draft and saddle animals and their equipment, and for efficient transportation, all under military order and discipline; and finally, to keep the whole so effectively at work that there should be, as nearly as possible, a daily output of not less than 16,200 charged virus points from the farms, of which 15,000 must be sent daily, carefully registered and packed, to meet the requirements of the vaccinating forces, steadily and systematically at work in all parts of the island.

The objects to which all lent the utmost endeavor were to turn out daily the needed amount of the very best lymph; so to handle, keep, and transmit it that it should preserve its virility and in competent hands and conditions successfully do its work, and, finally, both to keep and transmit with each package of virus the full record of its production, that the origin and full history of every "point" used might be known to its user when desirable. The difficulties to be overcome, suggested by the Inspector General, were neither few nor small, but are in part enumerated here, only that any who may be called in the future to a similar undertaking, heavily handicapped, need not be dismayed.

Glanders and farcy were spreading in the Government corrals from which it was necessary to take the first fifty or more horses and mules, necessary to the very vital transportation of station and farms, and, being dangerous to both men and animals, were for a time the source of much anxiety. Many of the principal supplies, such as the ivory "points," the initial virus, the tuberculin, gutta percha, and other packings, instruments of all kinds, formalin, chloroform, medicines, fresh meats and other food, had to be brought from "the States." Fresh beef and ice in large quantities had to be regularly supplied and were teamed almost daily, twenty-three miles up the hilly military road, to the camps. Competent men (though all inexperienced) and good cooks must be found, able to stand severe physical strain for months, while a large part of the necessary plant, such as vaccinating-tables, packages, etc., had to be designed by the writer and constructed by the local mechanics. Refrigerator service and appliances, while most essential, were almost without existence and had at first to be crudely created, and it was matter of extreme difficulty so to keep, pack, and transmit the fresh lymph under the tropical sun that it should arrive at its destination still virile. Severe drought and consequent low water and short pasture were grave troubles, and at one time seriously threatened to stop the work.

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*General Orders No. 7.

HEADQUARTERS DEPARTMENT
OF PORTO RICO.
San Juan, January 27, 1899.

I. The inhabitants of this island must be protected from smallpox. Every resident who has not had this disease will be vaccinated, and hereafter all infants must be vaccinated before reaching the age of six months.

II. The Chief Surgeon of the Department is charged with the duty of providing the material and carrying out the details necessary in the work of vaccination.

III. The following-named officers of the Medical Department are hereby appointed Directors of Vaccination and assigned to the designated divisions for temporary duty:

Major P. R. Egan, Brigade Surgeon, U.S.V., to the Division of Guayama, and of Humacao, south of the Municipality of Naguabo and including Vieques, with headquarters at Guayamo.

Major George G. Groff, Brigade Surgeon, U.S.V., to the Division of Arecibo, with headquarters at Arecibo.

Captain Charles Willcox, Assistant Surgeon, U.S.A., to the Division of Mayaguez and Aguadilla with headquarters at Mayaguez.

Captain F. P. Reynolds, Assistant Surgeon, U.S.A., to the Division of San Juan and of Humacao, north of and including the Municipality of Naguabo, with headquarters at San Juan.

Acting Assistant Surgeon Azel Ames to the Division of Ponce with headquarters at Coamo (promoted Major during the work).

IV. In addition to his duties as Director of Vaccination, Acting Assistant Surgeon Azel Ames will take charge of the production and distribution of the necessary supply of vaccine virus.

V. The above named officers will report by letter to the Chief Surgeon of the Department for the necessary instructions in the performance of this duty.

VI. All Medical Officers serving at posts in the different divistions are hereby detailed as Inspectors of vaccination and will report, when their services are required for this purpose, to the Directors of their respective divisions. The care of the sick of the command must not be neglected in performing this special duty. All other officers will render any assistance they may be called upon for in facilitating the work of vaccinating the people.

VII. Inspectors of vaccination will report to the Chief Surgeon of the Department any neglect on the part of the civil authorities to carry out this order, with view to such action as may be deemed necessary by the Department Commander.

By Command of Major-General Henry:

FRANK McINTYRE,
First Lieutenant 19th Infantry,
Acting Assistant Adjutant General.

The screw worm, the larvæ producing which are laid in all abraded and open wounds of bovine animals in Porto Rico, speedily hatching the worms in great numbers, gave infinite trouble. These worms burrow deeply if neglected and rapidly destroy the soft tissues and even the life of the infested animal. It was perhaps the most serious of the troubles encountered, doubling anxiety and labor and much increasing the cost. The sudden loss, by peremptory General Order of the War Department discharging them, of a large part of the most competent men, largely of the Army Hospital Corps, was utterly demoralizing and for a few days threatened to disrupt the work. It was necessary in many cases to hire the same men at double wages as civilian employees, leaving only contract control over them. Losses of cattle by escape and theft and insufficient camp-guard; the necessity (because new ones were not received) of re-using old points weakened and curled by the thorough processes of cleaning, and the drinking and gambling habits of a small percentage of the men, were all considerable difficulties at times, where absolute regularity and system were indispensable. The initial difficulty and a cause for a time of the utmost anxiety was the character of the lymph sent from "the States" with which to vaccinate the cattle. Experience had shown all virus so sent to be of doubtful value; nearly all, especially the glycerinated, had proved inert, and it was a serious matter to bring together such an assemblage of men, cattle and materials, the success and utility of which must all hinge upon the virility of the initial virus. Happily, enough proved virile to start the local stock and secure safety, though not before those in charge had experienced a great alarm and had learned some new facts as to cattle vaccination in the field.

After some forty cattle had been duly tested and vaccinated and the proper time of incubation had elapsed, search was made for the hoped-for typical vesicles which one is accustomed to see upon vaccinated calves. Not one was to be found and the disheartening indications were that all the virus from "the States" had failed, as indeed most of it did. Twenty-four hours later, unwilling to believe that all had failed and that the undertaking must be abandoned, another and most careful search was made by the writer and Dr. Timothy Leary, the invaluable pathologist, which changed deep disappointment into jubilation, for though no vesicle was then or afterward discovered, plenty of typical crusts or cones were, which, being removed, gave typical lymph-yielding bases in abundance. It soon became evident that the heads of the cattle not being confined as in vaccine stables in the United States, their rough tongues doubtless broke the vesicles as soon as formed, as did also the underbrush, and the rough stubble and coarse grass on which they lay. The crusts resulted, and from their indurated ring-like bases the finest lymph freely exuded and was gathered in great quantities, the "output" of the farms reaching the surprising figures of 27,000 (double) charged points for a day.

The very remarkable and carefully recorded experience determined conclusively several basic facts as to vaccine-lymph and its use, viz.: (1) That vaccine lymph, especially when glycerinated and in tubes, will not retain its efficacy when exposed, even very briefly and without great variation of temperature, to the change from a temperate to a tropical climate. Though the reason does not appear, the fact is indisputable, and all countries in the tropic zone should produce their own virus if so fortunate as to start a "stock." (2) That given virile initial lymph and good cattle, the very best of lymph can be produced by practically the same methods in the tropics as well as in colder countries, provided care is taken to protect it as soon as taken and until used from alterations of temperature. (3) That the glycerinated virus has nothing to recommend it for tropical use, if it has anywhere, and that glass-tubes are worse than useless. (4) That a good, carefully-kept virus has in the tropics equal if not greater activity and efficacy than that in northern latitudes, though it ought not to be kept as long. (5) That it is much better in the hot countries, especially, to confine the vaccination upon animals for virus to a definite number (say twenty) of abrasions on each side rather than to make linear incisions and secure thereby many lines of vesicles. In the first place the specific fever created is too great and is most undesirable, while the ravages of the screw worm, if it effects a lodgment in such extensive incisions, are difficult to manage. (6) That in field work nothing is so good with which to vaccinate an animal as the ivory point, the tube being useless, and nothing is so good to take virus with. Surely nothing is so serviceable for the vaccination of the people, or practicable in a hot country. (7) That there is every warrant for positively asserting that although syphilis, tuberculosis, elephantiasis, and tetanus are common in Porto Rico, *in no case has it followed that any of them, or any other disease, bovine or human, was imparted to an individual by the process of vaccination.* With tetanus so common in the island that 818 cases occurred in seven months of 1900-1901, a single case only (in an infant) occurred after vaccination in 860,000 vaccinations, and this, of course, would have occurred as readily with any abrasion. (8) That it is not advantageous to use cattle older than yearlings, and that the sexes are of equal value. (9) That it is of importance, and well worth the little it will cost, to keep a good "stock" of vaccine lymph alive in any tropical country, especially if insular, even when little or no large demand exists. The frequently recurring demands for virus for infants and those who will be revaccinated, if wise, call for more or less lymph and emergencies can soon be met if a good stock is maintained, as it easily can be.

Vaccination of the People.—Of course, in such a country and with people in such circumstances, the difficulties of organization and work were many and some of them novel. The long habit of submission to authority, the experience already had at the hands of the Spaniard, who had really made some commendable efforts at general vaccination in former years, but had failed, and the wholesome respect for the American officials, doubtless all contributed to minimize oposition and secure obedience to orders. The rapid spread of the disease and its high mortality also counted; but the master-stroke which secured prompt and personal interest in being vaccinated was the promulgation of a circular, now famous as "No. 3,"* prepared by the writer and issued by General Henry, which made the possession of a vaccination certificate a prerequisite to employment or pleasure. As soon as it was made evident by this "circular" that it was to be made a bread-and-butter matter, from hills and valleys, hamlets and municipalities, young and old flocked to the vaccinators wherever located, and fairly tumbled over each other for precedence. Often two or three hundred, old and young, would be still waiting unvaccinated, when darkness closed the day's work and these in some cases were not reached for a day or two, camping down where night found them for the next day's chances. Sometimes the vaccination was continued by lamp-light to relieve the pressure.

To the *Alcaldes* and their assistants, the *commissarios de barrios,* and to the local physicians and their *practicantes,* much credit is due. Few of them knew any English, and that they so nearly comprehended and carried out the plans and instructions of organization and acomplished so much effectively is indeed matter of surprise. The *Alcaldes* were charged with appointing the physicians and their *practicantes* (the vaccinators) on the nomination of the Directors of the several Divisions; with providing clerks, assistants, rooms, and conveniences and with the most important duty of distributing the fresh virus, daily received from the Station, to the several vaccinators wherever at work in their respective *Alcaldias.* The service was marvelously well performed, largely by foot-runners, and with a degree of success that would have been impossible to any other agency.

Vaccination is of course much the same wherever performed. There were, however, no breaking tubes, no dull and dirty lancets, no diluted and sophisticated virus, but in their places the clean, freshly-charged ivory "points" with nothing but pure lymph on their faces, their sharpened edges most excellent substitutes for the always suspicious lancets, with full records of the work done, and neat durable certificates.

Among the new and notable features developed in the vaccination itself, were the following. (1) Contrary to the fact in northern cities and towns, and even in the country, house-to-house vaccination was practically impossible, except in very few places, and the people must, as a rule, come to the vaccinators, the necessity for having their certificates being the prime check upon them. (2) Vaccination with the sharp edges of the virus "points" was alone practicable under such conditions. (3) The danger of infection of the abrasions made, even when but little preliminary effort at cleansing occurred, was practically *nil,* but it became considerable from dirty finger-nails, clothing, etc., when the vesicles formed and scratching resulted. Yet in no case were there really serious results, notwithstanding hot water is nowhere available. (4) Cleanliness and light antiseptic dressing were all sufficient to prevent infection and hot water freely applied was equal to the reduction of all undue inflammation, even in the worst and dirtiest of regions.

There is possibly some warrant for the belief that when smallpox is prevalent vaccinations "take" most readily. Certainly an unprecedent percentage of successful vaccinations (87½ per cent.) accompanied the Porto Rican epidemic of 1899. Doubtless the fine quality and entire freshness of the virus, the care with which, under explicit instructions and inspection, the work was done, and the fact that records were kept and certificates given, contributed chiefly to this highly gratifying result. Twenty-two cases were recorded of persons successfully vaccinated who were "seamed and furrowed" with confluent smallpox. This, of course, indicates clearly that the immunity usually conferred by the disease itself is not always permanent, even though the first attack be severe, as there can be no doubt that a person susceptible to vaccina is equally so to variola. A few cases of smallpox were reported in persons who had evidently had that disease. Such are, of course, extremely rare.

That the protection of vaccination against smallpox "wears out" more or less speedily in different individuals and that revaccination is therefore required at varying intervals were determined beyond cavil by abundant evidence. Numerous cases were observed in which the patient was not vaccinated until after exposure to smallpox and, being taken ill with the latter, the vaccination in every case clearly operated to modify the attack, and in some cases to cause the variola to abort, usually in the third stage. Many hundreds of persons presented themselves for vaccination who claimed, with apparent truthfulness, to have had repeated attempts made to vaccinate them without success, but who took perfectly in 1899. Whether previous efforts failed from want of care or skill, or from inert virus, or because of the insusceptibility of the person, it is, of course, impossible to say. An interesting illustration of how effectively the best intended efforts may defeat the object in view was furnished by a list of seventy-two persons vaccinated in one of the hill-towns. Their arms were cleansed, under the printed instructions of one in authority, with a solution of bichloride of mercury. Not a single vaccination of the whole number took, though made carefully and with fresh virus. The facts being learned a revaccination was ordered and the entire number was successfully vaccinated when the bichloride was left out.

Not a few cases were noted in which young children had evidently received immunity before birth from variola, their mothers having had the disease while they were *in utero,* and a few cases were found in which vaccina had apparently given exemption to the child from that disease through similar conditions. Repeated attempts made with great care to vaccinate such children and even young adults proved in every case ineffectual, though previous vaccination was positively denied and no evidences of it could be found.

No death from variola of any who had been successfully vaccinated in recent years was reported among those ill of the disease, and in but few such cases was there much disfigurement. In no case did serious results of any kind arising from the vaccination itself follow vaccination or revaccination. "Bad arms" were invariably found to be the result of needless infection from filthy or careless habits. Attempts at vaccination are never to be recklessly counted as vaccinations and absence of susceptibility is never to be inferred until repeated competent efforts made with tested virus without results have reasonably determined its non-existence.

Summary.—In October, 1898, smallpox was endemic in Porto Rico; in December it was epidemic; in January, 1899, it had "honeycombed" the island; by February there were over 3,000 recent cases and the disease was spreading at a gallop.

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*Circular No. 3.

Headquarters Department
of Porto Rico.
San Juan, March 18, 1899.

The Alcaldes of the several jurisdictions of the Vaccination Divisions of this Department are required to use all their authority to secure prompt compliance on the part of the people, with the order of these Headquarters requiring all the inhabitants to present themselves for vaccination when notified. Any persons failing to so present themselves, either for vaccination, or examination afterwards, as directed, will be punished.

No person who cannot present a duly attested official certificate of vaccination after the date when the official vaccination in his or her barrio or district, is completed, shall be admitted to any school, public or private; shall travel by any public conveyance, visit any theatre or any place of public resort, engage in any occupation related to the public, or receive employment.

All school teachers, managers, employers and others affected by this order, will govern themselves accordingly under penalty.

By command of Major-General Henry:

W. P. HALL,
Adjutant General.

In February systematic compulsory vaccination, carefully and scientifically conducted and recorded, was begun simultaneously and with pretty equal efficiency in all parts of the island. It was vigorously prosecuted for four months only, till July 1st, when 860,000 vaccinations had been made in a population of about 960,000. Of these 87½ per cent. were successful. The work then ceased, because completed; the disease had practically disappeared; the fuel for it to feed upon had been consumed by the "head-fire" of vaccination. In the two and a half years that have since passed, instead of the former annual average death-rate of 621, the mortality from smallpox has been, as stated, but two per annum in a population of nearly a million. Can any *honest,* intelligent person doubt in face of these indisputable and easily verified facts what it was that in **four** short months drove smallpox from its long-time reign in the island and has since kept it out? *Vaccination alone did it and will do it effectively wherever compulsory legislation, properly enforced, secures its benefits to all.*

ORIGINAL ARTICLES.

CLINICAL EXPRESSION OF CHRONIC MYOCARDITIS.[1]

BY J. H. MUSSER, M.D.,
OF PHILADELPHIA.

JUST as chronic myocarditis may exist without physical signs, so it may be devoid of clinical expression; on the other hand, the symptoms may persist for years and be the most distressing and terrifying that can possibly occur to man.

It must be remembered that in the states to be considered an appreciation of the true cardiac condition can be possible only by considering the etiological circumstances. A diagnosis can be established only when the case is considered on broad grounds. It has been stated that the male sex predisposes, for in men the causes are operative, as their too often strenuous life invites the affection. Overeating, indulgence in alcohol and tobacco or perhaps tea and coffee, further prepares the way; syphilitic infection is also a too common etiological factor; gout and rheumatism are undoubted etiological associates. In short, all those antecedents which lead to arteriosclerosis may also be considered as etiological factors in myocarditis, for the former is antecedent to the latter. Hence, too, we consider age, after fifty, and the upper walks of life as elements of etiology of value in the diagnosis.

It does not necessarily follow that a patient with endarteritis will have myocarditis, certainly not clinical forms of myocarditis. In the Philadelphia Hospital we see the most advanced cases of atheroma with often no associate heart symptoms, or very few histological evidences of myocarditis after death.

The following conditions obtain in myocarditis:

I. A person may have chronic myocarditis in an advanced degree without any symptoms. Death may be due to other causes, as an intercurrent affection, an infection, a terminal nephritis, or one of the many phases of endarteritis. The final termination may be "cardiac" and yet the myocarditis may not be the cause of the symptoms or of the dissolution. Thus, coronary artery disease with obstruction by thrombus frequently causes death in cases of latent, and sometimes of advanced, myocarditis.

II. Often the presence of a previously unsuspected myocarditis is not made known either by signs or symptoms except in or during the course of an infection, as pneumonia, or of a toxemia, as gout. An arrhythmia, an unsuspected dilatation, synocope or bradycardia, may be brought out by the toxemia or the infection. This process and its extent in the heart make for woe in the course of the intercurrent disease.

III. The clinical expression may be effaced by the phenomena, which have elsewhere been referred to, of an associate or primary valvulitis, a nephritis, an emphysema, or an arteriosclerosis.

Combined with the cardiac symptoms of myocarditis, to be referred to later, we may have the symptoms of chronic nephritis of pulmonary emphysema, of advanced valvulitis with failure of compensation. Again, the symptoms of endarteritis in other parts may obtain, alternating in character and constancy and interchanging with symptoms of the aforementioned conditions. Now a cerebral thrombosis, then the same condition of an extremity, again uremia and then an apoplexy, or, perhaps, phenomena of coronary artery disease (previously referred to) may close the scene. Such shifting of scenes and complexity of phenomena require a clear conception of the associate or concomitant processes in senile or sclerotic myocarditis and intensely increase the interest in its study. It is well to dwell upon these associate and more frequently dominating features, for only by realizing the pathological lesion in the background—the endocarditis and secondary myocarditis—can the nature of the phenomena be recognized.

IV. The clinical expression may, on the other hand, be simply the phenomena of senility.

V. The symptoms to be discussed are those which, singly or combined, usually the latter, compel the patient to seek relief. They are the *cardiac symptoms of myocarditis.*

1. *Heart Tire.*—As seen in cardiac debility, this is out of proportion to the evidence of senile decay elsewhere. There is breathlessness, edema of the feet, syncopal attacks or anginal attacks. Local anemia occurs, hence the functional activity of organs, as the brain, is in abeyance. Digestive disturbances, renal insufficiency and cerebral inactivity occur singly or combined. The syncope occurs on the slightest exertion, as straining at stool, rising up in the bed, or turning from side to side; the breathlessness on any attempt to walk, often, even, to use the upper extremities. Weakness out of proportion to the seemingly strong appearance of the patient is characteristic.

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[1] Continued from page 53.

Tremor cardis may be present; palpitation is not infrequent. Tachycardia is the rule and the pulse is small and feeble.

2. *Dilatation of the Heart.*—The dropsies, the effusions, the congestions, the enlargement of organs, the functional derangements, coming and going, soon permanent, with the physical signs of cardiac dilatation, are well known and need no further exposition. It is interesting to note, however, that if such symptoms arise it is unusual to have anginal symptoms. If, however, in these dilatations, digitalis is administered to the degree of inducing a hypertrophy, cardiac pain not unlike that of angina is induced. After long dilatation, its immediate symptoms may be relieved and then those of secondary sclerosis of other organs, as of the kidneys, arise.

3. *Angina Pectoris.*—(*a*) A person with myocarditis may have one attack of angina terminating in death without premonitions of cardiac disease. They are the cases in which there is often found, associated with the myocarditis, extensive coronary artery disease, death being due to thrombosis. (*b*) The paroxysms may continue for twenty-four or forty-eight hours, before death closes the tragic scene. J. C., aged seventy-six years, endarteritis and myocarditis; had six paroxysms in seventy-two hours, perishing without other symptoms. R. M. G., aged sixty-four years, had epigastric pain one night; worked hard the next day; had several attacks the following night and died at 10 A.M. of coronary thrombosis. Arrhythmia frequently attends the breast pang. It may have preceded the angina for months or years. Dyspnea might also, although not necessarily, have been a forerunner, occurring either on exertion or at rest. It is not common to see the forms of dyspnea which will be described later, attended by shock and so often terminating fatally, associated. Nor do we usually see in these subjects of this rapidly terminating form of angina the cardiac asthma of dilatation nor the nocturnal form of dyspnea due probably to the same cause. We do see dyspnea from pulmonary congestion developing in the status. When the angina vera is replaced by angina sine dolore we have asthmatic attacks in most of the cases. In rare instances the first paroxysm is followed by rapidly recurring attacks, increasing weakness of the heart and death in cardiac asystole or the ingravescent asystole of Balfour. Houchard describes the condition as *l état de mal angineux*. S. H., aged fifty-nine years, seen with Dr. Stryker; usual antecedent history of overwork, excessive strain, indulgence in food and tobacco; had glycosuria in 1898-1899. In fall of 1901, had several attacks of angina, very characteristic; he consented to rest in bed in November, and this soon relieved the increasing paroxysms; but, while under observation, the heart dilated; paroxysms of dyspnea did not occur, but the lungs became congested. No angina occurred. He died suddenly while in a recumbent posture, perhaps from thrombosis. (*c*) The paroxysms continue for several years. John Hunter suffered for twenty years. During the interval the patient will suffer, as in the preceding cases, from arrhythmia and the forms of dyspnea observed in that class. No other cardiac symptoms arise except in very rare instances. Thus X. Y., seen with Dr. Ferguson, had paroxysms for one year; arrhythmia and dyspnea. Death in one of the paroxysms without other cardiac symptoms. Pronounced dilatation may occur with the marked symptoms belonging thereto. On the other hand, it is usually the case that other symptoms or accidents of endarteriitis do not occur. Thus, an anginal subject does not die of apoplexy; again, a prolonged intermission may occur in the attacks of pain, but if arrhythmia has been present, it does not subside. The dyspnea, except on exertion (dyspnea of dilatation), may be in abeyance. Indeed, subsidence of the pain is usually due to moderate dilatation as indicated by the symptoms and physical signs.[1] One of my patients, suffering for one year from angina, arrhythmia and dyspnea, and having the physical signs of myocarditis, had a severe attack of gangrenous appendicitis, for which he had to undergo an operation, and from which he had a long convalescence, during which time he was free from pain and dyspnea for six months, when the attacks recurred, followed by death in one of the paroxysms. (*d*) Occasionally we see angina sine dolore, as first described by Gairdner, the incident occurring in myocarditis with moderate dilatation.[2]

Duration.—Notwithstanding this intermittency of paroxysms a patient who has had one attack of angina is almost invariably doomed. I have seen life prolonged four years, but I should say eight to twelve months is the average duration of life after the first attack. As already mentioned, it is curious that death is due usually to the angina and to no other condition. The state, apparently, does not invite the terminal infections which occur so frequently in the course of cardiac dilatation due to myocarditis.

Symptoms.—The features of an attack of angina pectoris have been so well described by its earlier historians and so exhaustively reviewed recently by Osler, that it is not necessary to lay them before you. Moreover, we usually engage but a short time in practice, before we become by dint of our own observations familiar with the picture of a paroxysm. This is particularly true if our practice be among the better class. A considerable experience, however, leads me to believe that practitioners, on the one hand, do not take cognizance of nor place in their true relationship to etiological facts and physical conditions the slight attacks of pain or cardiac distress which are called "anginal." On the other hand, the malady is so terrible that they hesitate to pronounce its true nature and resort to neuralgia, "tobacco heart," indigestion, rheumatism, and other evasive terms to explain the symptoms. It is true, too often, the patient struggles with a paroxysm during the night, and because of some associate gastric symptoms, as flatulence or nausea, places so much stress upon this feature as to mislead the physician. Moreover, his own perceptions of the phenomena of the attack are obscured by the stuporous state of the mind and the lethal state that follows. It is a good working rule to consider anginal all nocturnal bizarre attacks of chest pain, epigastric distress or even indigestion, unless a definite cause can be determined, if other features of the picture are present. Too often we must recognize in medicine the drama of "Hamlet," without the presence of the Dane. The picture must be recognized by its frame and the minor coloring; some filling in must be done by the observer.

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[1] Musser, Angina Pectoris, Trans. Assoc. Phys., X, p. 85.
[2] Loc. cit.

It is a melancholy fact that doctors, the victims of this disorder, usually attribute their symptoms to some gastric disorder or otherwise explain their discomfort. Dr. S., aged fifty-seven years, suffered for five months without advice, thinking the paroxysms were of gastric origin. Those of us who see even the earliest signs—mutterings of the storm—must buckle on our courage and, in justice to the patient and family, explain the nature of the ailment in full. We must be just and therefore brave.

The following case was thought by the attending physician to be one of indigestion.

Angina Pectoris.—February 21, 1898, L. H. S., aged sixty years. Temperate; no tobacco, discontinued its use ten years ago. Not an excessive eater. Drinks water, tea and coffee, the first to excess. Eats regularly but rapidly. Sleep hours are abundant. Saw hard service in the army. Father died of unknown disease, said to be angina pectoris. Mother died of old age. Brothers and sister living and healthy. Had jaundice in army. Had inflammatory rheumatism thirteen years ago. Always well otherwise. Weight 230 pounds; has large abdomen. For past three years pain in epigastrium. First attack attributed to overeating. On exertion, or when excited or nervous, seized with pain in epigastrium; also dyspnea on walking, and when the pain is severe it extends to left pectoral region and to the shoulder and arm, often to the right. Countenance ashy and pale; during attack the face is very ashy and bathed with free cold sweat. No arcus senilis. Pulse, high tension. Some oppression after eating or when talking. No impulse of heart. Sounds indistinct. Dulness upward to second rib and to left nipple line.

February 23, 1898: No pain for twenty-four hours. Strength better.

February 28, 1898: Pain relieved. No pain from Broad Street to my office (eight squares).

March 7, 1898: Constipation, otherwise much better.

March 15, 1898: Much better. No attack of pain except on exertion.

April 8, 1898: Much better. Feels stronger and has not had any pain for some time. Lost fifteen pounds. No dyspnea. Constipation better. After eating and especially at night, tired feeling and even numbness over the stomach.

May 6, 1898: Much better. Can take longer walks without pain and excitement; letter, telegram, etc., does not increase or excite the paroxysm as formerly. Not nearly so nervous. Not influenced by children around as formerly. Pulse irregular in volume. Some tension. Often in the evening some numbness over abdomen.

Died of angina in the summer of 1898.

Pain in the Arms.—Of the clinical features, I wish to say a word regarding the location of the pain. It is important to consider the arms, one or both, as one of the courses which the agony takes. Sometimes, in the paroxysms, the cardiac regions are not affected, but the extremities are the seat of frightful pain while a paretic sense is complained of. The entire paroxysm may spend its force in this location, or, on the other hand, alternate from precordia to arms.

Jaw Pain.—A., aged fifty-six years, suffered intensely with pain in the jaws with each paroxysm. An anatomist and practitioner of medicine, he believed from his sensations that the pain was due to swelling of the arteries in the bony and fibrous canals of the lower maxilla.

Substernal Distress.—Allied to the anginal paroxysms is that curious localized pain or sense of discomfort which the patients with myocarditis describe as seated in a definite area; that is, it continues in a fixed area until the sense of suffocation is relieved. It bears some relation to dyspnea. J. described it as a circle two inches in diameter above the xyphoid. "Remove that and I am well." C. marked a square of four inches at the lower part of the sternum The patient did not have paroxysms of angina.

Pseudo-Angina.—The most difficult problem in clinical medicine is to distinguish the true and false forms of angina. In the pseudo-angina of anemia, hysteria, neurasthenia, and the angina vaso-motoria of Nothnagel, concomitant circumstances help us. These forms are fairly easy to differentiate. Toxic angina, more particularly from tobacco, presents more difficulty. This is usually the case because the tobacco subject presents the other features, too often, of endarteritis. Of course we see heart pain in young smokers, possibly anginal, certainly toxic, and perhaps with arrhythmia, relieved by discontinuance of tobacco. Similarly with tea and coffee; they are usually neurotic subjects and have some indigestion, so that we might argue that the phenomena were not anginal or even cardiac. I am, however, beginning to doubt the diagnosis of heart pain from tobacco in old subjects as non-anginal unless there are other signs of nicotine poisoning. I had thought for some time it was possible, and kept before me as confirmatory the case of H. B. S., who had had clinical features and physical signs of myocarditis with angina. His complexion was typical. With the discontinuance of tobacco and with other hygienic regulations and some medication he improved to a remarkable degree. His color became normal, the gallop rhythm and reduplication disappeared, cardiac pain subsided and the dyspnea did not recur. Arrhythmia alone remained, but so lessened that an intermittency of pulse occurred but once in 200 to 400 beats. At the height of his valetudinarian glory, a slight attack of angina recurred and four days afterward he perished suddenly from thrombus of the coronary artery. The following is that part of the protocol of the autopsy bearing on this point.

Pericardium.—Cavity almost completely obliterated by firm fibrous adhesions.

Heart.—Mitral valve measures 10.2 cm.; slight, smooth, nodular thickening at free edges of cusps. Aortic valves measure 7.9 cm. in circumference. Capsule normal. At edges of sinuses of Valsalva there is a yellowish opaque thickening with small projecting calcareous spicules. In the sinuses there is the same yellowish thickening without calcification. Tricuspid and pulmonary orifices not examined. Coronary arteries are irregularly dilated and tortuous, containing yellow, opaque areas, which are more or less elevated. In the left coronary artery, 4½ cm. from its orifice, is a firm yellowish thickening of the intima with some calcification, producing a nodular prominence, and almost completely obliterating the lumen. Adherent at this point and extending for a distance of 1.4 cm. toward the orifice of the vessels is a grayish-red, firm clot producing complete obstruction of the lumen.

Myocardium.—Wall of left ventricle measures 1.7 cm. in thickness. Papillary muscles are very prominent. A portion of the left ventricle corresponding to the distribution of left coronary artery is much softer than normal, more easily torn, grayish-yellow in color, in places distinctly yellow, and opaque; the opacity is most marked in the endocardial and intermediate portions, involving also the left group of papillary muscles. In the midst of this softened tissue can be seen a few small blood-vessels, containing grayish-red clots. Beneath the endocardium of the papillary muscles there is a distinct reddish mottling due to minute hemorrhages. The right portion of ventricle while not so firm, and lighter than normal in color, does not show this softening. Cavity of left ventricle is slightly dilated. Wall of right ventricle not examined.

Anatomical Diagnosis.—Coronary sclerosis; thrombosis of left coronary artery; infarction and acute softening of wall of left ventricle; hypertrophy and dilatation of wall of left ventricle; chronic obliterative pericarditis.

Is it any wonder, then, with this case in view, that I hesitate to pronounce cardiac pain in tobacco subjects who have endarterial settings an innocent toxic phenomenon? In other instances my experience has been similar, and I fail to recall cases of so-called tobacco angina in old subjects without the toxic symptoms of tobacco, that did not turn out to be myocardial.

4. *Dyspnea.*—We see the dyspnea of dilatation, if that condition complicate myocarditis, with or without pulmonary congestion or pleural effusion. It is constant, or it is increased by exertion, or it is paroxysmal and hence usually nocturnal. In the latter instances there is cyanosis and orthopnea, perhaps due to a temporary increase of the pulmonary congestion. It must not be confounded with the toxic dyspnea of nephritis so often concomitant.

Myocardial Dyspnea.—Dyspnea associated with the aforementioned localized substernal distress without true paroxysms of angina. Often, as the patient is seated before you, he will have paroxysms, probably induced by the psychical excitement attendant upon the consultation. It occurs independently of such influence, however, possibly following the taking of food. The patient takes ineffectually breath after breath without satisfying air-hunger until a final full breath satisfies him for a time. "There," remarked M. after repeated labored breathing, "I have gotten over it. I can now breathe easily." Its features are such, with the ashy countenance and the cardiac signs, as point unmistakably to the myocardial condition. One can almost make a diagnosis by the facies and the intermittent dyspnea. It was seen in pronounced form in the case of J. and in that of Walter H. It is true that in such cases there is often nephritis and, hence, it is difficult to attach a true pathological explanation to this symptom. It is remarkable that in many of these cases the dyspnea is relieved after some physical exertion. Thus J. would get relief for hours by a bicycle ride of eight or ten miles. He never, I may say, had angina, but he did have arrhythmia extreme and died of uremia. D. of Buffalo, whom I attended with Cary and Sherman, died of terminal dilatation and nephritis. In the early stages of the myocarditis he experienced great comfort from long bicycle rides. The Oertel principle of therapeutics was empirically discovered and followed in exaggerated form by these patients. It must not be confounded with the curious form of psychical dyspnea occurring in certain forms of indigestion, from gastric neurasthenia.

Myocarditis, Dyspnea, Dilatation of Heart, Murmur in Recumbent Position Only.—G. T., merchant, aged forty-nine years, married, consulted me November 9, 1899. Smoked regularly five cigars a day. No stimulants. Life regular, but hustling. Long hours for sleep. No venereal disease. Has had rheumatism in elbow for years occasionally. Never in bed with any infection. For past five years dyspnea on exertion. Seven years ago attack of flatulence with pain down arms and over chest. Dr. Engel said in 1892 he had fatty infiltration of the heart. I was consulted for the dyspnea, which was continuous and, with the ashy face, made a striking picture.

In August, 1898, on exertion up hill, severe pain in forearm. Dyspnea then began on exertion. Improved in fall. Had been smoking up to August. Always unable to walk after eating and very dyspneic. Had a pain in back during 1898 and 1899; never any discomfort on lying on left side. During the last year rose in morning to urinate. Slept well before that. No loss of sexual power. During the last year twitching in arm and neck. Nervous in many respects. Prematurely old, gray, sallow complexion. Not much wrinkled. Temporals prominent. Urine (middle of morning), specific gravity 1015, acid, no odor, no albumin, no sugar. Microscopical examination negative. Centrifuge used. Previous to 1898 rode on bicycle. After four-mile ride felt well; but during first mile had dyspnea. Has had hacking cough and some pain in epigastrium. Father died at sixty-one of Bright's disease; mother died in childbirth. Brothers and sisters all healthy. Parents of father lived to old age. On inspection no impulse is visible. Marked venous pulsation in neck, greater on right side than on left. Palpation, left radial smaller than right; both show high tension. Impulse faintly felt in fifth interspace nipple line. No thrill. No carotid thrill. Area of cardiac dulness begins at third rib and extends to sixth. At fourth rib is 6 cm. wide and at sixth rib 9 cm. On auscultation, gallop rhythm over left ventricle; short and high-pitched sound over right. In recumbent posture, on holding breath, a loud systolic murmur developes at xyphoid cartilage. Muscular element of first sound very weak. Hands are dusky and sensitive to cold. Died suddenly from thrombosis of coronary artery, November 27, 1899.

Dyspnea with Angina.—The often-repeated story, "I walk half a square and then must seek support to get my breath and relief to the breast anguish." One brave fellow walked to the cars from lamp-post to lamp-post. Another used the ruse of shop-window exploitations to disguise his distressed and circuitous ambulations. Usually if the angina occurred when at rest there was no dyspnea. This was not always the case, however, and the interruption to breathing was created by or coincident with anginal paroxysms. This is one of the true forms of myocardial dyspnea.

Angina Pectoris, Dyspnea.—S. H., aged fifty-nine years, seen November 22, 1898. Pain in chest on exertion. Pain in arms, dead and heavy as if struck by a bar. When he starts to go out of office, the pain begins and then settles as a severe neuralgia. Starts to walk and is compelled to rest by lamp-post. Face gets pale. Perspiration starts and hands are cool. Has indigestion. January 19, 1899: Suffering from less rheumatism. Continues to have flatulence. Does not have so much pain in arms and chest as formerly. Sleeps better. Not such severe heart symptoms. No abnormal cardiac rhythm. Large area of gastric tympany. Color of lips bluish.

December 26, 1898: Heart's action rapid, 90 to 100. Accentuated aortic second sound. No impulse visible or palpable. Heart sounds not strong. No reduplication, but a slight gallop. Artery rounded, but no atheroma. Temporals prominent. Has angina pectoris.

Died May 1, 1901, of angina pectoris. During preceding month had frequent attacks, and since December, 1899, attacks every month.

Dyspnea with Dilatation.—Another form of myocardial dyspnea is that which is often the first premonition of myocardial trouble; it may be during a hard pull on the bicycle or on a mountain climb. After some physical effort, dyspnea occurs with precordial cardiac sensations of fulness or of sinking or with palpitation or syncopal sensations. After a brief rest, it may disappear and not recur for months, or a slight exertion again brings it about. Frequent recurrences become a warning and very soon arrhythmia, angina or dilatation ensues. At first it may be due to temporary acute dilatation or to arrhythmical action of the papillary muscles with asystole.

Myocarditis, Dyspnea, Angina Pectoris.—W. M. H., lawyer, aged seventy years, consulted me January 25, 1899. Not engaged actively in business the past five years. Father died of paralysis; mother died of paralysis at seventy. Two brothers died of heart trouble, one having diabetes also; another angina. Three sisters living in good health. At ten years patient had asthma followed by measles. This continued until the thirty-fifth year. Always had temporary relief by emetic. Since then tendency to disordered liver. Has had constipation and more or less dyspepsia. Within the last year shortness of breath, oppression and dread, and lately a severe attack of oppression. Has been in bed, with oppression. No precordial pain. Never had rheumatism, gout or vertigo. In the past months has lost ten pounds. Has myopia. Patient is large man, of sallow complexion, but no cyanosis. Color of lips good. No edema. Chest emphysematous. Liver dulness eighth rib. Left lobe rather large. Percussion over chest very bandbox-like. Cardiac dulness third rib light; absolute from fourth to seventh and out to parasternal line. Stomach tympany sixth interspace. Apex fifth interspace, not visible and not strong. Right ventricle sounds weak; left ventricle short and weak. No prolongation of first sound. At sternal part of third interspace, slight systolic murmur, not constant. No accentuated second sounds, although distinct aortic. Pulse high tension. The patient seemed to improve under treatment. Four months after these notes were taken the patient died of angina pectoris. Relief from dyspnea had been obtained.

Dyspnea Due to Asystole.—Angina is one of the tragic terminations of a career which has been fraught with the high and often severe duties in the world's battle. Another tragic end is that attended by the paroxysms of dyspnea and shock we are about to describe. Often called "heart failure" or "edema of the lungs" or, wrongly, "congestion of the lungs," one paroxysm frequently ends the battle. Again, the attacks may recur at intervals of weeks or months, the fatal paroxysm not occurring until a year or two after the original attack. I have seen this continue in rare instances over three years. In one patient, a woman aged seventy-nine, the attacks recurred for five years.

The attacks are characteristic. The patient is suddenly seized with dyspnea. The respirations are labored, but not much increased. A rattling sound attends it, readily found to be due to fluid in the tubes, as the general large and small râles show. The clear fluid pours from the mouth or is discharged easily, if the attack is not to be fatal; with difficulty or not at all, if death is imminent. The respiratory distress is extreme. The patient sits upright; the face is pale; the brow is covered with sweat; the hands are cold and pallid. There is little if any lividity. The temperature is subnormal; the pulse rapid, thready, irregular, perhaps not perceptible at the wrist. The patient is in a state of profound shock. Because of the lung noises, the heart sounds cannot be heard, or only as a confused jumble, or with irregular and ineffectual systoles. Either no change in the cardiac dulness is distinguished or it may be lessened.

In the interval, after full recovery, the patient is fairly free from dyspnea. There is probably some arrhythmia; rarely any angina and dilatation does not supervene. As in angina, the occurrence of one attack is usually the beginning of the end. I have not seen any one live more than five years, and they usually die within the year from the onset, generally from an attack similar to the original, such attacks having grown more frequent toward the end. Of course, a progressive weakness develops, and, as in the case of J. T., nephritis may become a dominant feature. His case is so full of interesting features illustrating the complexity of the cardiac pathology that I may be permitted to cite it.

Dyspnea; Cardiac Asystole; Myocarditis; Endocarditis; Glycosuria; Pulmonary Edema; Rheumatism; Hot Feet; Nephritis.—January 3, 1896. J. T., minister, aged fifty-seven years, married; no children. Father living and healthy. Mother died of gall-stones. Patient delicate from birth to sixteenth year. Always active and in good health since then. Cataract five years ago. Urine examined eighteen months ago; trace of albumin; no sugar. Polyuria past year. Three or four quarts a day. Lost flesh slowly until six weeks ago. Since then on diabetic diet with rapid loss of flesh. Now passes two quarts in twenty-four hours. Feels weak. Skin not hard or dry. Last ten days has sciatica. Thirst great at first; now lessened. No hunger. No indigestion. Bowels not constipated. Tongue furred. Pulse 90 to 110. Faster after exertion. Gallop rhythm of heart. No murmur, second sound accentuated. Liver dulness, upper is one inch below normal and lower is above margin of ribs. Edge palpable; left lobe enlarged and distinctly palpable. Epigastric pulsation. Muscular rheumatism and joint inflammation last ten years. Hot feet the past three or four months; burn severely. Reflex of right leg less, of left leg absent with atrophy, but atrophy has been present since early life and left leg always weak.

January 8, 1896: Awake at nights with burning heat sensation. No perspiration.

January 30, 1896: Less urine. No loss of flesh last week. No headache. Heat in feet less. Flushes better. Pain in legs; sciatica past four weeks; worse on exertion. Pulse about 80 to 84. Urine slightly less.

February 10, 1896: Sciatica relieved entirely. No sugar, but some albumin in urine. Appetite fair. Bowels regular. Two quarts urine in twenty-four hours.

February 27, 1896: No discomfort after eating. Tongue furred as yet. Formerly sweat much after preaching. This has disappeared entirely. Has held his own in weight and is feeling a little stronger. Appetite fair. Some flushing.

April 19, 1896: Has had several attacks of "heart failure," "congestion of lungs," dyspnea, and shock. Otherwise has improved very much. Night micturition.

April 25, 1896: Pulse 96. Respirations quiet. Felt tired about the chest after some rather unusual exertion. Appetite fair. Urine 1⅞ quarts in twenty-four hours. Does not get up at night so frequently. Some sciatica.

June 11, 1896: Apex beat not felt. Impulse to right and left of xyphoid and below; character short, sharp, not heaving. Sound of apex inside nipple line. Dulness to parasternal only. Apparently emphysema. No murmur. No accentuated second sound.

December, 1896: Gaining in strength. Sleepless and polyuria. Three to five pints of urine in twenty-four hours. Color better. No dyspnea. Pain in lumbar region and down sciatic nerve. Appetite and digestion good. Heart regular. Bowels constipated. Burning of feet and legs. Must keep feet uncovered all night. Reflex less. Heart sounds strong. Internal sense of weakness gone. No atheroma. Improvement due to rest, the Schott treatment and nitroglycerin.

February 2, 1897: Sugar has now disappeared from urine. At night when he lies down, he must at once begin to urinate and this continues until a quart or more is passed and until this occurs sleep is impossible. The urine is very pale. Is very nervous, although no doubt the apprehension of sleeplessness is the cause.

The patient continued to improve and was lost sight of. It was learned that he resumed a portion of his ministerial duties, and preached successfully. He died in 1899 of "congestion of the lungs."

These attacks of cardiac asystole differ, it seems to me, from those of acute dilatation. The difference is mainly in the following particulars. Had the patient been examined before the attack, signs of myocarditis would have been present in the acute dyspnea of that affection, whereas dilatation could occur without the presence of fibromyocarditis. In the former, shock and edema of the lungs are dominating features. In dilatation, marked cyanosis is prominent, tachycardia and arrhythmia are extreme, while the lungs are the seat of congestion rather than edema. In dilatation there is congesspleen, liver and kidneys show it. The urine gives evidence at once of the congestion, whereas the urine is not necessarily nor instantly changed in myocardial dyspnea. It seems academic to discuss the diagnosis of edema and congestion of the lungs, and usually it is not practicable. It must be admitted that very frequently it can not be done. Nevertheless, it seems well to attempt it, for, as one appears to be a feature of myocardial dyspnea (edema) and the other of dilatation (congestion) and as the treatment of each is different, it is well to have an idea of their distinction. I may say in passing that, as I have stood at the bedside of these cases, my feelings were that the edema was largely from impairment of innervation of the pneumogastric nerve, whereas the pulmonary congestion was vascular.

Edema of the lungs is attended by shock, by an abundant, frothy expectoration, by dyspnea without much cyanosis, and by signs of the out-pouring of fluid in the large bronchi rather than in the air-vesicles. Congestion of the lungs is attended by cyanosis, by some cardiac distress, as palpitation, by congestion of other organs, and by the physical signs of moderate filling of air-vesicles with fluid and by frothy, bloody, but not abundant, expectoration. There does not seem to be the same fear of impending death in dilatation. While air-hunger is the same in both—orthopnea marked—it is a necessary attendant of myocardial dyspnea, but not of the congestion of dilatation.

5. *Tachycardia.*—Frequently an unduly rapidly acting heart is due to myocarditis. Usually there is some arrhythmia, but it is remarkable how little suffering may occur, although the heart is beating at the rate of 150 to 180 per minute. Such heart hurry must be distinguished from toxic and from reflex forms of tachycardia. It must be remembered that it is not to be confounded with palpitation, the phenomena of which give rise to actual mental suffering and to local distress. It is one of the essential symptoms of Graves' disease and a common accompaniment of mitral stenosis. Even in the absence of these conditions tachycardia may be a symptom of myocardial strain and may be relieved by judicious management. The great fact to be remembered is that tachycardia may be the terminal cardiac symptom of myocarditis, death resulting in from forty-eight hours to one month after the onset, the end being attended by *ingravescent asystole,* congestions of internal organs proceeding slowly to further embarrass the casual failing circulation. A patient with tachycardia may suffer from tremor cordis, the sensation of fluttering followed by a systolic shock belonging thereto alone giving rise to distressing symptoms.

6. *Bradycardia.*—Time forbids a description of the interesting syndrome of Stokes-Adams. It is now well recognized that with this slow pulse, syncope, convulsions and pseudo-apoplexy may arise. Patients with this syndrome rarely suffer from angina or from severe arrhythmia. A fatal syncope is the cause of death. A progressive dilatation rarely takes place. The syncope may be hastened by exertion or by excitement. Thus, X. Y. Z., a lawyer, aged fifty-eight years, had two fainting fits at long intervals, then a succession of syncopal attacks, then moderate dilatation with pulmonary and renal congestion; then improvement followed by rest at Atlantic City, at which place a fatal syncopal attack followed a slight bronchial congestion. The pulse was never over 50 and was never irregular. The duration was nine months.

The following case illustrates features of the symptom-complex; here notably arrhythmia and delirium cordis occurred at the end. This is rare, as pointed out by Balfour, although it was marked in the case following the one now to be recorded.

January 16, 1900: S. B. M. The patient was first admitted to the hospital six months ago, shortly after he had had a severe bleeding from the nose. This was accompanied by some vertigo, but after he had been in the hospital a week he was discharged without further symptoms. He was again admitted four months ago, suffering from vertigo and headache with occasional slight syncopal attacks. These were accompanied by momentary paralysis of the arm with numbness and tingling. These symptoms soon disappeared and at the end of three weeks the patient was able to leave the hospital. He was admitted again about two weeks ago, with dyspnea, vertigo and palpitation, and the following history was elicited: His father and mother died of old age; his brother died suddenly at the age of thirty; one sister died of consumption and one of "spitting of blood." The patient had the diseases of childhood, since which time he has always been well and strong. He has led an active life, although there have been long periods during which his occupation has been a sedentary one. He has always used tobacco and alcohol in moderation. He has not been in any business for the past twelve years. He has often had slight rheumatic attacks, but nothing of a severe nature.

About seven months ago he had the violent epistaxis already referred to, with which there was some hematuria. Since then he has had three or four slight syncopal attacks, and is often subject to general depression of spirits. He did not lose consciousness during the slight syncope, and he has not had one of these attacks for three months. He never has had any edema of the feet. About two months ago he began to have dyspnea and palpitation, with some paroxysmal dyspnea.

At this time he also began to have some edema of the feet and legs. He lived on the fourth floor and was obliged to walk up stairs, so that he soon increased these symptoms and began to have marked feeling of oppression over the precordia. He lost some weight and began to have insomnia, due to dyspnea and oppression. There were slight frontal headaches and constipation.

On admission the temperature was 97°F., pulse 40, very full and of high tension; respirations 22. The patient was fairly well nourished, although he was quite pallid and sallow. The temporal arteries were prominent, and arcus senilis was slight. There was no edema, the temperature of skin was good and the hands were cool. The postcervical glands were palpable. Heberden's nodes were marked in both hands. The patient had rather a coarse tremor of head and hands, which was decreased by volitional acts. The tremor disappeared when the patient was asleep. The knee-jerks were increased on both sides, but there was no ankle-clonus. Pupils were equal and reacted sluggishly to light and accommodation. The chest was short and slightly barrel-shaped. The lungs were normal, except for a slight emphysematous condition. The apex impulse of the heart was found in the fourth interspace in the mid-clavicular line, and outside of this was an uncertain impulse. There was an epigastric impulse to left of the median line, but no heaving impulse nor shock on palpation. Deep dulness of heart extended from the upper border of fourth rib above to the apex beat below from half an inch outside of mid-clavicular line in the fourth and fifth interspaces on the left side to one-fourth inch to right of the sternal border on the right side. The apex beat was just palpable. At the apex was heard a rough, long systolic murmur which was transmitted into the axilla. The second sound at the apex was "clicky." The systolic mitral murmur was well heard in all the interspaces above and also at the pulmonary area, where the second sound was weak. The mitral murmur was well heard at aortic area, and here the second sound was split. A mitral murmur was also heard at tricuspid area. The radial arteries were quite hardened.

For two days the patient had occasional attacks of paroxysmal dyspnea and a feeling of oppression over sternum. He had also occasional flushes of head and face. The feet and legs to knees were quite edematous. The pulse became rapid, but at time arrhythmic, in both rate and force. The murmurs were about the same. The general condition had not improved. After admission the pulse-rate varied between 46 and 30, usually being 36 or 38. It was quite full and lasting. There was then much irregularity in rate and force, with frequent abortive systoles. The temperature ranged between 97° and 98.4° F., being for the most part below 98° F. The urine varied between sixteen and thirty-six ounces, and contained 0.05 per cent. of albumin, also hyaline and pale granular casts, and was of a specific gravity of from 1020 to 1030. The feet and legs up to knees were quite edematous and the patient gradually grew worse. He died suddenly two weeks after admission. An autopsy was refused. It was an undoubted case of myocarditis in the course of valvulitis.

In the case of T. M., seen with Dr. Alrich, the pulse was very slow and the pseudo-apoplectic and epileptiform attacks were very common during the last two months of his illness. The patient, aged seventy-two years, had marked atheroma. The pulse averaged 40. During the attacks of unconsciousness, the pulse would become rapid and irregular. Full systoles would be followed by half a dozen or more incomplete ones. The attack would begin with rapid breathing, cyanosis, tonic and clonic spasms of the extremities, great turgescence of the face, occasional biting of the tongue, stupor, coma of brief duration, followed by an acute sense of exhaustion and extxreme aching of the extremities. As many as thirty attacks occurred daily, many without convulsions. For some unknown reason they would be absent for ten days or a week. Excitement always induced an attack. He never had angina.

Slow pulse and cardiac pain, in contrast with the foregoing, may be of toxic origin, as the following case appears to show. The patient made a complete recovery.

Toxic Angina Pictoris, Bradycardia.—F. C. W., builder, aged forty years; February 9, 1897. Until 1895 he drank considerable beer. He took a fair amount of exercise; used tobacco to excess, but had recently lessened the amount. Formerly weighed 300 lbs.; now weighs 240 lbs. Height, five feet six inches. Father living and healthy. Two brothers, both healthy, one very stout. Mother died of cardiac disease at sixty-three, after an illness of two months. Grandparents died at old age. Had intestinal trouble when seventeen years old. Perfectly well except attacks of quinsy since childhood. These attacks have continued up to the present time. For the last four years each fall he has had giddiness and cardiac pain, with slow pulse. Pulse averaged 50, but was sometimes as low as 40. High-tension pulse. Second aortic accentuated. Sounds normal, but impulse labored. Pain in third interspace and at apex. Squeezing sensation. Gets up at night to pass water. Appetite good. Dilatation of stomach. Bowels regular.

February 24, 1897: Perceptible lessening of tension. Much less pain. Appetite fair. Lost four pounds.

March 10, 1897: Better. Much less pain. Weight 218 lbs. Reduced from 230 lbs. No dyspnea. Myalgia in muscles of back. Taking Schott treatment.

April 19, 1897: Has stronger impulse. Apex in fifth interspace outside nipple line. Slight murmur, soft; low pitch. Better as to cardiac sensations.

7. *Arrhythmia.*—Finally, myocarditis may have clinical cardiac expression in arrhythmia alone. Palpitation may attend, but does

not commonly do so; delirium cordis, however, is not infrequent, and death may come after many years from asystole, sudden or ingravescent. In the marked cases early in the ailment it is not uncommon to see dilatation with dropsies, congestion and the physical signs of mitral insufficiency. Improvement may take place for a time, followed by recurrences, and death occur from either nephritis, dropsies and cardiac asthenia, or from a terminal infection. Death from angina is rare; indeed, occurrence of the paroxysms is rare. Dyspnea, however, is common when signs of dilatation arise.

THE SANITARY CONDITION OF STREET-CARS IN NEW YORK.

BY GEORGE A. SOPER, PH.D.,
OF NEW YORK.

Two recent fatal disasters have served to focus a large amount of attention upon the question of public safety on railways in New York City. Referring to the New York Central tunnel collision and the explosion at the Park Avenue tunnel, Judge Cowing, in addresing the February Grand Jury, recently said:

"There are two cases which I expect will be placed before your body for its action and which have not only cost the loss of human lives but greatly shocked and disturbed the peace of this community. Public safety is an important consideration in a city of this size, and to prove this laws have been enacted for the protection of human life which, if they were enforced with celerity and zeal, should make disasters of this kind well-nigh impossible. There is a stage at which negligence of public safety becomes criminal. It is for you, gentlemen of the Grand Jury, to look into these matters with exceeding care and intelligence. If you find criminal neglect on the part of any person, do not hesitate an instant in bringing him before this bar, no matter who he may be, to be judged and punished."

From Judge Cowing's severe words, which fairly represent public sentiment, it might be inferred that liability to disastrous accident was the pending danger of city railway systems, but such in reality is not the case. Without intending to minimize this form of danger, which is great enough to be calculable and should certainly not be ignored, it must be stated that statistics show that great disasters cause a very small proportion of the total loss of human life on railroads.

The importance of railway dangers seems to be inversely proportional to the notice they receive. We hear a great deal about the loss of twenty lives in the smash-up which occurs on an average once in a decade, but we do not notice the loss of the three hundred lives which are snuffed out one by one by the trolleys and other railroads in New York City every year.

And there is another danger which is even less apt to be taken into account by the public. This is the danger of injury to health through the insanitary condition of our street cars. The importance of the subject is not to be denied. A vast amount of suffering and pecuniary loss is caused by preventable sickness in New York, and evidence is not wanting to show that the street-cars are responsible for their full share in its causation.

Sanitary Condition of Street-Cars.—Theoretically, the trolley car is a sanitary improvement over the public conveyance of a former day, but practically, as it is seen in New York, it is an invention of doubtful hygienic value. If we name in its favor greater size, better heating and lighting facilities and higher speed, we must also take into account the fact that it is not well adapted to carrying the great number of people who ride upon it. Under present conditions, greater size does not insure greater convenience; in the rush hours of night and morning it means greater discomfort. Cars with a seating capacity of from twenty to thirty people often carry from sixty to ninety passengers. How great overcrowding becomes is illustrated by the nightly spectacle of the throngs who seek transportation to their homes across the Brooklyn Bridge. At this point it is not uncommon for people seeking to board cars to be trampled upon; men and women have been killed here in their efforts to find a place upon the trolley-cars.

The sanitary evils of overcrowding are not speculative. From the time of Sedgwick and Farr to the present day there has been a great stream of statistical and analytical evidence to prove that persons who breathe poor air and occupy crowded quarters furnish high death-rates.

Physiological Effects of Poor Ventilation.—The physiological effects of poor ventilation are well known. Air vitiated by the lungs is low in oxygen, high in carbonic acid and high in organic matter. Want of a sufficiency of oxygen, combined with the presence of products of respiration in the air, causes a reduction of heart action, increase in the rate of respiration, tendency toward headache, loss of appetite, reduction of vitality, nervous exhaustion, and, in severe cases or in delicate organizations, nausea may be an immediate result of breathing foul air. Many who have traveled in overcrowded street-cars are familiar with some of these effects and are aware of their injurious nature.

The power of resisting disease is lessened.

Poor ventilation causes the naturally vigorous condition of the tissues of the air-passages of the nose and throat, which normally have the power of rejecting or destroying dangerous bacteria, to become impaired and the entrance of the organisms which are the cause of bronchial and pulmonary disease is greatly favored.

The part played by human beings in gathering and giving off bacteria in the cars should not be forgotten. According to Thomson and Hewlett[1], the number of bacteria inhaled by a human being under ordinary circumstances may reach many thousands during one hour's tranquil breathing.

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[1] Trans. Royal Med. and Chir. Soc., Vol. XXVIII., 1895.

The air expelled is sterile, so long as there is no conversation; but Koeniger,[1] a pupil of C. Fraenkel, has shown that bacteria are freely given off in particles of moisture by persons in the act of speaking, whispering, sneezing or coughing.

Another effect of foul air is to offend the esthetic sense, which is a consideration by no means to be neglected in a sanitary question of this nature. The musty odor of close places is partly accounted for by Billings, Mitchell, and Bergey,[2] who consider it to be due to volatile, fatty acids, associated with bodily excretions and the products of decomposition contained in the expired air of persons having decayed teeth, foul mouths or certain disorders of the digestive apparatus.

Proof of Insufficiency of Ventilation.—To those who have ridden in the street-cars of New York during rush hours in winter, the fact that they are insufficiently ventilated needs no demonstration. The public, as though familiar with the dictum of De Chaumont[3] that the air of enclosed spaces should not be unpleasant to the sense of smell of persons coming from outside air, appreciates that the musty odor noticeable in poorly-ventilated street-cars indicates that there are waste matters in the atmosphere which should have been promptly gotten rid of.

Now, an average adult takes into his lungs 396 cubic inches of air per minute and gives off the same amount of vitiated air, which must be greatly diluted before it is suitable for further respiration. The measure of this necessary dilution is very easily understood, for we know that, while fresh air contains about three parts of carbonic acid and air which has passed through the lungs 441 parts of carbonic acid per ten thousand volumes, the air of enclosed spaces becomes close when the carbonic acid exceeds about five parts per ten thousand. From these data it is found that something like fifty cubic feet of fresh air should be admitted to each car every minute per person.

It is clear that no such allowance of fresh air is supplied to passengers on any line of closed cars in Greater New York when they are running beyond their seating capacity. Such ventilation as occurs takes place irregularly by the opening and closing of the doors for the entrance or exit of passengers, or through primitive transoms and not by carefully-regulated ventilators. The writer has found the air of these cars to contain as much as 26.2 parts of carbonic acid gas, as determined by the Pittenkoffer method. Repeated counts of trolley-cars in New York in cold weather have shown that about sixty per cent. had all their transoms closed. The insufficient warming of street-cars in winter accounts, in part, for the attempt made to keep them entirely shut up. Want of a sufficiency of warmth is a prevalent source of complaint and a danger to health, especially in the cars of Brooklyn.

Ventilation on the elevated roads is generally inferior to that on the surface lines, because of the greater size of the cars and smaller proportion of time during which the doors are opened and the people are stirring about.

Carbonic acid gas in the cars of the elevated road has been found by the writer to run as high as 31.2 parts.

The use of coal as a motive power, with the consequent gases, moisture and steam, adds considerably to the discomfort of passengers and makes the condition of the enclosed air especially unsatisfactory.

Bacterial Condition of the Air of Cars.—We have remarked how the street-cars of New York are at times greatly overcrowded and have noted how overcrowding reduces the natural resistance of the body toward disease. It remains to show that specific sources of disease probably occur to a very considerable extent in the air of these overcrowded public conveyances.

That many species of bacteria exist in the street atmosphere of New York has been frequently demonstrated by analysis, the quantitative work of Firth[1] and the isolation experiments of Dyar[2] being fair examples of such proof. The fact that pathogenic germs exist in the street-cars has been scientifically proved by Hance.[3]

The elevated railroad cars are in some respects more insanitary than the surface cars. Examinations of the cocoa mats used on the floors of the cars of the elevated railroad have shown that fibers one and a half inches long may hold three or four million bacteria.

But there is no need of extending these data. Only straws of such evidence are necessary to show that the floors and air of street-cars become polluted with dangerous bacteria.

The origin of many of the disease germs which occur in our street-cars can be understood by anybody who has noticed the universal and disgusting habit of spitting. The Board of Health some time ago caused conspicuous notices to be posted, warning the public that spitting in the cars is a misdemeanor punishable with imprisonment and fine, but this order has become a dead letter. The steps and platforms of elevated railroad stations, with their disgusting accumulations of sand, and the cocoa mats of the elevated roads and the gratings on the floors of the surface cars are favorite places for those who indulge in this dangerous habit.

The findings of bacteriology leave no doubt as to the fate of a large part of the expectorated matter. It becomes dry and is pulverized under foot and is finally distributed through the air with dust. How far the spitting habit common in street-cars is responsible for the eight thousand deaths from consumption of the lungs which occur in New York every year can safely be left to the reader's imagination.

Tuberculosis is not the only disease which is probably communicated in the street-cars. From the facts at present known concerning the etiology of other infectious diseases, it can hardly be doubted that the infective poisons of scarlet fever, measles, influenza, diphtheria and pneumonia, not to say smallpox, are spread from person to person through the impure air and close personal contact which occur in the cars.

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[1] Zeit. für Hg. V. 34.

[2] J. S. Billings, S. Weir Mitchell and D. H. Bergey, Smithsonian Reports, July, 1895, page 389.

[3] De Chaumont, Proceedings of the Royal Society of London, Vol. 23.

[1] Studies from Dept. Path. College P. & S., N. Y., Vol. VII.

[2] Am. Annals N. Y. Academy of Sciences, Vol. VIII, May, 1895.

[3] N. Y. Med. Record, Feb. 13, 1897.

Conditions in Tunnels and Subways.—New York is soon to see a remarkable development of its railway-passenger traffic underground. It is expected that in two years a rapid transit service twenty-one miles long will be in operation under the streets of the city. The New York Central Railroad, which already operates several miles of subway, is to build extensive additions underground at and near its Forty-second Street Terminal; the Pennsylvania and Long Island Railroads are to connect on Manhattan Island near Thirty-fourth Street by a road built under the city and under the North and East Rivers, and other almost equally extensive projects for underground transit have been announced.

None of the plans for these subway roads, so far as made public, indicates that any special arrangements will be made for the permanent avoidance of the sanitary evils to which attention is here invited. In view of this fact, it may not be undesirable to inquire whether these dangers are likely to be especially prominent in the underground traffic and whether any additional risks are to be looked for in this form of city transportation.

From what is known to the writer at the present time, the greatest dangers to be apprehended on the underground roads are those of overcrowding, want of proper ventilation, and bacterial cleanliness.

Concerning the ventilation of cars, what has been said with respect to the surface lines and their needs will apply to the cars which will run in the subways, with this difference: the subway cars will be enclosures within an enclosure and consequently more difficult to ventilate.

In respect to ventilation outside of the cars, it is significant to note that the air of but few of the many tunnels so far built in various parts of the world is satisfactory. The Mont Cenis tunnel, the Hoosac tunnel, the underground roads of Paris, Liverpool, Glasgow and Boston, and the St. Louis and Baltimore tunnels are all imperfectly ventilated, if they are to be judged from a critical hygienic standpoint. The air in some of these tunnels is almost insufferable; men have been fairly suffocated in some of them, and a ride in the best is not infrequently attended by at least uncomfortable consequences.

It appears that there are no satisfactory methods of ventilating tunnels without great expense. Mechanical fans supplying or exhausting air and the use of blow-holes, shafts or openings, through which air-currents caused by the passing trains are supposed to circulate, have been tried and found inadequate to insure that freedom from objectional waste products which is the end aimed at in ventilation.

Failures in ventilating tunnels are usually due to a fancied necessity of operating them in the most economical manner possible. Practically the only reliable method of ventilating them requires the use of mechanical fans, and the operation of these involves a continuous and considerable expense. There have been those who have thought that the piston action of moving cars was sufficient to secure a sufficient interchange of air; that foul gasses, being warmer than the rest of the atmosphere, would readily escape if vertical shafts were provided to carry them off; that the currents produced by the rapid passage of trains would cause the foul air to rush up and fresh air down, through blow-holes, and that large stations or occasional openings would afford suitable outlets for the escape of undesirable gases. Unfortunately, experience has shown that too much reliance has been placed upon these cheap and easy methods and that, in the ventilation of large and important tunnels at least, they are not based upon a correct interpretation of physics or sanitation.

Aside from the use of fans, the most beneficial results have followed the opening up of large portions of the tunnel roof to the outside air. But this is not so much solving the problem of tunnel ventilation as it is escaping it. In proportion as a tunnel loses its covering it becomes an open cut.

It is interesting to note the ventilating arrangements of some well-known tunnels.

At Paris an attempt is made to ventilate the underground road of the Chemin de Fer de Secaux by exhausting the impure air with fans at the highest point of the line, fresh air being allowed to enter at the stations and through shafts. Blow-holes are located from 200 to 300 feet apart.

At Liverpool, the tunnel under the Mersey, 1.2 miles long, is provided with a ventilating equipment consisting of a 7-foot ventilating conduit alongside of the tunnel and provided with fans. Openings communicate between the tunnel and conduit at intervals. Foul air is forced out through this conduit and fresh enters at the ends of the tunnel. Analysis has shown that the carbonic acid in the air of the Mersey tunnel varies from 7.4 to 26.4 per 10,000 volumes.

The air in the subway of the Metropolitan Railway of London has long been a source of complaint. A Government commission in 1897 found that the carbonic acid ran as high as 89.4 parts per 10,000. It was recommended that the tunnel be opened as far as practicable by removing portions of its roof.

It is interesting to note that a conclusion similar to that reached by these English investigators was recently arrived at by the Pennsylvania Railroad and the city of Philadelphia in connection with the work of depressing the tracks of the Pennsylvania road in that city. After devising an elaborate system of fans, conduits and stacks to secure a change of air every five minutes, this plan was rejected for a system of large street openings and a natural circulation of air.

Perhaps the conditions presented by the Boston subway resemble more closely those which may be expected on the rapid transit road in New York than could be found elsewhere. Fifty million people use the subway every year. There are about five miles of track. The entrances and large stations afford conditions favorable to the interchange of air. There is a ventilating equipment consisting of fans 7 to 8 feet in diameter, placed at intervals of from 500 to 1,500 feet. The air in the Boston subway was tested by Prof. Carmichael and found to contain from 6.53 to 9.45 parts of carbonic acid per 10,000 volumes of air. In a car with open ventilators and about sixty-five passengers the carbonic acid gas was 24.97 parts per 10,000. On the street at this time the carbonic acid was 4.5 to 5.9. It is true that the motive power used on most underground roads furnishes the chief cause of complaint and that the annoyance caused by the gases, steam, smoke and cinders given off by locomotives could be avoided by the use of electric traction. But have we any assurance that no coal will be used on the underground railroads of New York? We have seen the tolerance of the public for this nuisance in times past. Locomotives burning coal have been running on the elevated roads and in New York Central tunnel through the heart of the city for many years and in the plans of the future subways the public has not been given assurance that the use of coal will be prohibited.

Disagreeable and unfavorable to health as the gases and solid matters given off by coal are known to be, the chief sanitary danger of cars under ground is the same as the chief danger of cars on the surface and cars overhead. The bacteria of disease are the objects against which the most unceasing warfare should be waged. In so far as the subways, with their openings for stations or ventilation, will be permitted to act as collecting-places for dust and disease germs, transit underground will be dangerous to health.

Conclusion.—The foregoing remarks indicate the nature and extent of what is possibly the greatest danger to which the people of New York are exposed in traveling by street-cars. Under present circumstances, thousands of exhausted and fagged men and women seek the trolley and elevated roads every night and there fight for an hour or so for a place to stand while being transported from their business places to their homes. In the morning they repeat the experience. The foul atmosphere and inadequate warmth of the cars in winter predispose them to disease, and the unclean habits of a dangerous minority of the passengers sow bacterial poisons in the air. Insufficient heating and ventilation are prominent dangers also.

Is there any remedy for the sanitary evils of New York street-cars? There are several. In the first place, the power of the community to make laws for public safety should be utilized and for this purpose it is needful that the necessity for such ordinances should be appreciated. Evidently, the call for decency and sanitary safety which has thus far been made by the Board of Health has not been heeded, and it is consequently incumbent upon every person who appreciates the importance of this subject to give it emphasis.

The principal objects toward which, as the writer believes, laws intended to improve the sanitary condition of street-cars in New York should be directed are a reduction of overcrowding, the prevention of spitting, and the proper ventilation and warming of the cars. If overcrowding can be prevented, the problems of ventilation and warming can be properly solved, but not otherwise.

The remedies available for overcrowding lie in providing more cars to carry the people and in restricting the number of passengers carried per car. It is not possible to discuss this problem within present restrictive limits, but it may be said that a judicious application of both remedies is the solution to which the writer's study of this problem points.

The rapid transit road, now building, will relieve the congestion to some extent and most of the present lines can be made to handle many more cars than are now employed. If it were made unlawful for the companies to carry more passengers than they could accommodate with sanitary safety, there is little doubt that superior facilities for transporting the public in a decent and convenient manner would be forthcoming.

The prevention of spitting is the subject of greatest consequence in the sanitary improvement of street-cars. Until time develops a popular sentiment which will recognize expectoration to be a moral as well as a legal crime, the most practical remedy for the nuisance seems to be to hold the transportation companies accountable for the condition of the cars. That the companies would be able to attend to this matter without undue hardship is evidenced by the fact that various rules for the safety of passengers are already enforced on the street-cars of the city; for example, pasengers are not allowed to ride on the steps of open cars in the summer and generally not on front platforms at any time.

As regards the sanitary aspects of the contemplated railroad subways not included in the rapid transit system, it would be premature to offer any criticism. The resources available for protecting public health under such conditions are sufficient to make these underground steam railroads inoffensive and sanitary. How far these resources of sanitation will be utilized depends largely upon how serious a view the public takes of its own safety.

TABLE, SHOWING CARBONIC ACID IN THE AIR OF SOME TUNNELS AND STREET-CARS. RESULTS STATED IN PARTS PER 10,000 VOLUMES.

Mont Cenis Tunnel	107.0
Mersey Tunnel	7.4 —26.4
Severn Tunnel	4.2 —11.4
Liverpool Overhead Electric Railway Tunnel	12.9
South London Electric Railway Tunnel	8.4 —10.8
Metropolitan Railway Tunnel, max.	89.4
Boston Subway	6.53— 9.45
Electric Car in Boston Subway	24.97
Steam Car on Elevated Railway, New York	5.8 —31.2
Electric Surface Car, New York	6.1 —26.2

GENERAL ANESTHESIA IN THE PLETHORIC.

BY M. L. MADURO, M.D.,
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There are certain phenomena attending the administration of an anesthetic to plethoric individuals that cause considerable anxiety. Chief among these symptoms are duskiness of the features which makes one fear that too much of the narcotic is being given, when in fact not enough is being administered. These cases impress on one the falsity of the idea that a certain method should be employed in anesthetizing in all cases. Experience shows only too well that such is not the case, that the general physique is deserving of some consideration, and that there are types as well as individuals demonstrating new lessons in the art of producing narcosis.

In plethoric persons respiration is likely to become embarrassed, very naturally when it is borne in mind that the upper air-passages become so engorged as to lessen the capacity of these parts. This occurs in normal subjects and is to some extent due to the effect of the anesthetic *per se*. How are we to deal with such cases? The answer naturally suggests itself: Give little anesthetic and plenty of air. And what is the result? Your patient "comes right out." Push the ether, if that is the anesthetic of selection, and the duskiness returns and no end of trouble is caused. It has been my experience that a combination of anesthetics fits these cases admirably. Plethoric individuals take nitrous oxide very well, but ether rather poorly unless you allow them to switch off to chloroform for a while, when on resuming ether they will bear that without discomfort. Hence it has been my habit to administer the narcotics in this order: Immediately after the nitrous oxide, give a few whiffs of ether, then give chloroform for an average of ten minutes, continuing with ether graded with a small amount of air for the rest of the operation. It is to be remarked that no harm can come from such frequent change of narcotics.

Reasons for the sudden transition are apparent when it is noted that spasm of the respiratory muscles during ether narcosis in the plethoric suspends thoracic movement, causing diminished blood oxygenation, and leads to a retardation of the pulmonary circulation and consequently to an overdistended state of the right heart. Chloroform relieves that distention, induces deeper and quieter breathing and causes the pulse to become full and regular in character. This action is only temporary, however, for chloroform continued for any length of time in these cases will be found to be depressing to the heart's action, and the reverse of the order of symptoms found at the beginning of its use will supervene. On the other hand ether, readministered at this stage, steadies the pulse, and if carefully handled will result in the continuance of deep, quiet breathing instituted by the chloroform. The question may be asked, Why not begin with chloroform? Because the latter is especially depressing to the plethoric when used in this way, and gas is well tolerated, is safer and quicker. In hospitals it is not an uncommon thing to see anesthetized patients appear dusky all through the operation and literally "soaked" with ether to be kept under its influence. Investigation will very often prove such patients to be of the plethoric type. At other times it will be noted that some patients take ether very poorly and that all will immediately go well when chloroform is substituted. Conclusions have been formed from these observations which convince me that the method of administering the combination of narcotics, one at a time, is the best, safest and most satisfactory in plethoric subjects.

Pharyngeal stertor is a condition sometimes found in the plethoric and is due to the tongue touching the pharynx. It is apt to cause alarm if one has not heard it before. It is easily overcome by pulling the jaw forward and should give no concern. In like manner the occasional inaudible breathing under chloroform will give some anxiety, but is readily corrected by pulling the jaw backward. Occasionally it happens that the plethoric subject will show a depressing effect on the circulation independent of the change of anesthetic, and certain circumstances under which the heart's action may become enfeebled are usually found responsible. Hemorrhage may be cited as one cause. This, as will be readily understood, should be quickly controlled. Vomiting, due to a light anesthesia or to the choking resulting from a collection of mucus, will cause cardiac depression. One should be certain of a deep narcosis before beginning the operation and very watchful of maintaining it all through. The mouth should be drained by maintaining the proper position and should also be swabbed. The position of the head will sometimes influence a freer air-way. Curiously enough some short-necked individuals breathe more easily if the head be slightly raised by a hard pillow; the majority fare better with the head low and well extended. Again the plethoric usually gain considerable respiratory comfort with the head turned to one side. Such freedom is accounted for by the fact that the tongue falls to the side of the air-passage, and mucus drains more readily from the mouth.

Another important factor in causing circulatory failure is fear on the part of the patient. Many plethoric subjects will come to the operating-table assured that they will not be able to stand the anesthetic on account of difficulty in breathing. That difficulty is naturally exaggerated when excessive apprehension stimulates it. It is very important here to assure the patient that deep and regular breathing will insure a good result. The narcotic to be used should abolish consciousness quickly and should be followed up by the one that is the greatest cardiac stimulant. Such a combination is to be found in nitrous oxide and ether. Opium is used now and then in these cases, usually to the detriment of the patient. The use of morphine, gr. ¼, half an hour before operation, is undoubtedly useful sometimes, but only in selected cases and for some special reason. It would be rational to suppose that when there is respiratory difficulty morphine could counteract it, but such a supposition has not been borne out by experience, inasmuch as after its use cyanosis will take place accompanied by swallowing movements and a decidedly alarming type of breathing—the too quiet, inaudible kind, coupled with the inability of the patient to rouse. These symptoms are all danger signals and should warn us to make full inquiries concerning the use of any opiates previous to the operation.

In conclusion it should be stated that the object of this paper is to prove that there are dangers connected with the administration of anesthetics in the plethoric which can usually be overcome through these hints, enabling one and all to experience satisfaction in selecting the most suitable narcotic.

A NEW METHOD OF APPROXIMATELY ESTIMATING THE NUMBER OF BLOOD-CORPUSCLES FROM STAINED SPECIMENS.

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Blood-examinations have of late attained great significance in the clinical pathology of most diseases. Especially in internal medicine the result of a blood-examination often has a great influence upon diagnosis. Frequently it is impossible to make accurate counts of the red and white blood-cells at the bedside of the patient; whereas it is always easy to spread some cover-slips which may be examined later. It therefore appeared of value to devise some method by means of which it would be possible to estimate approximately the absolute number of the red and white blood-cells from stained blood-specimens.

Several years ago one[1] of us showed that it is possible to determine the relative number of white to red blood-cells and partially also the absolute number of white cells in such specimens. We have now proceeded to make in a certain number of patients, first, accurate blood-counts according to the usual method, and, second, to count in a certain number of fields of the stained specimens the absolute number of red and white blood-cells and then to compare the results with one another.

The first attempt to count the blood-corpuscles was made by Vierordt[2] and is also based upon counting the blood-cells in a dried state. Vierordt took an accurately measured minute quantity of blood and spread it out on a slide in such a manner that each corpuscle was isolated and lying in one plane, so that the focus of the microscope did not have to be altered in order to count all corpuscular elements contained in this quantity of blood. For this purpose he drew into a capillary tube of known diameter a minimum of blood, measured the length of the blood column under the microscope and calculated its volume. The blood was then emptied into a drop of a solution of albumin or gum, which was spread out on a slide into a smear three or four inches in length in order to facilitate the count. Then the specimen was dried, a fine glass micrometer ruled in squares was projected over it, each square was counted and the number of blood-cells calculated from these figures. This method necessitated the counting of some 18,000 blood-corpuscles, and usually required from three to four hours.

This being a very tedious and for clinical purposes rather cumbersome method, Welcker,[3] instead of measuring the blood column each time, conceived the idea of drawing the blood at once into previously graduated pipettes and then diluting it with a 10-per-cent. sodium chloride solution.

"Then the blood is dried on a cover-glass which is placed face downward upon a micrometer, ruled in numbered squares, and is then counted."

From these earlier attempts the various later methods of diluting the blood by means of some fluid and subsequent counting of the blood-elements in a counting-chamber of known capacity have developed. Among these the method most used is that of Thoma-Zeiss.

In his inaugural dissertation* Einhorn says that for the purpose of determining the absolute increase or diminution of the leucocytes or lymphocytes he divided the sum total of the white cells counted in each case by the number of microscopical fields, thus establishing for each case an average for each field. In this manner leucocytosis could at once be recognized by the fact that the average number of leucocytes per field was increased.

Anybody who is experienced in blood-examinations will in a certain given case be able by studying the stained specimen to say that the red or the white cells are diminished or increased. This, however, applies only to marked cases and even then it would probably be quite difficult to estimate even approximately the number of red or white cells, as found by a direct count.

It is a well-known fact that, given the absolute number of red cells as determined by the Thoma-Zeiss counter, we can from the proportion of white to red cells in the stained specimens estimate the absolute number of leucocytes. Strange to say, however, nobody has as yet attempted to estimate the absolute number of corpuscles from the cover-glass specimens directly, without the absolute number of either the erythrocytes or leucocytes being given.

The purpose of this paper has been to compare the results obtained by means of the usual Thoma-Zeiss count with those determined from an examination of the cover-glass specimen. If it could be shown that these figures coincide more or less closely and without too great variation, then these counts from dry specimens could be utilized.

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*Loc. cit., p. 12.

We proceeded as follows: In each case the blood under the necessary precautions was first drawn into the red and white pipettes of the Thoma-Zeiss apparatus. Then cover-glass spreads were immediately made according to Ehrlich.[4] Finally a hemoglobin estimation by Gower's apparatus was added. The number of red and white cells respectively was then carefully determined by the Thoma-Zeiss counter.

In making the cover-slip specimens, we must observe that under no condition ought pressure to be exerted to force the blood from the puncture, but that it must flow out freely just as it should for use in the mixing pipettes of the Thoma-Zeiss apparatus. All precautions essential to a good spread as given by Ehrlich should be scrupulously observed, in order to obtain a uniformly thin distribution of the blood between the cover-slips, *viz.*, very thin, carefully cleansed cover-glasses, not too large a drop, etc. In the same manner the blood must spread out evenly between the cover-glasses by means of capillarity without the exertion of any pressure. If all these necessary precautions are taken, specimens suitable for our subsequent examination are obtained.

Preparations made by spreading the blood on a slide by means of a spreader or by allowing the blood to spread out by force of capillarity (according to Hayem) between two superposed cover-glasses held in forceps, are not suited to our purpose on account of the uneven distribution of the blood-corpuscles.

All our specimens were without further fixation immediately stained for two minutes by means of Jenner's stain,[5] which is really a universal one in that it brings out beautifully all the various granulations from eosinophiles to the granules of the mastzellen, which stain in a deeply metachromatic fashion. The neutrophiles and malarial parasites show up especially well.

Our method of examination was as follows: Starting from the supposition that in carefully prepared specimens the distribution of the blood elements, according as their number is larger or smaller, will vary correspondingly, we decided to count all the red as well as all the white corpuscles in a certain square area of the dry specimen and to compare the results thus obtained with those of the Thoma-Zeiss counter. As the unit of the square area counted we have taken a square millimeter. The number of red and white corpuscles contained in a square millimeter is calculated from the fields counted and this result is then compared with the number of blood-cells contained in one cubic millimeter as determined by the Thoma-Zeiss apparatus.

For making this determination we have found a medium power dry objective (DD or E of Zeiss or 5, 6 or 7 of Leitz) with a weaker and a stronger eyepiece most practical. We used objective DD and eyepieces 2 and 4 of Zeiss. With objective DD and eyepiece 2 the whole visual field comprised 0.23 square millimeters. The field area can easily be determined for each objective and eyepiece according to the well known algebraic formula, which makes the square area of a circle equal to πR^2 where $\pi = 3.1415$ and R = radius of circle. The radius of the visual field is determined by means of a fine stage micrometer or the divisions in the Thoma-Zeiss counting chamber, or, given the magnification, by measuring the apparent size of the field at 250 millimeters visual distance and dividing the number thus obtained by the magnification. In the following table we have calculated the area of the field of the various lens combinations most commonly used:

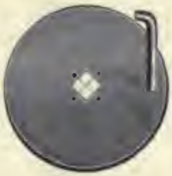
TABLE A.

AREA OF FIELD OF VARIOUS LENS COMBINATIONS MOST COMMONLY USED.

ZEISS.			LEITZ.		
Objective.	Eyepiece 2.	Eyepiece 4 with blood-counting diaphragm.*	Objective.	Eyepiece 1.	Eyepiece 4 with blood-counting diaphragm.*
DD	0.23 sq. mm.	0.0113 sq. mm.	5	0.26 sq. mm.	0.01 sq. mm.
E	0.09 sq. mm.	0.0045 sq. mm.	6	0.16 sq. mm.	0.064 sq. mm.
1/12 Oil	0.05 sq. mm.	0.0025 sq. mm.	7	0.075 sq. mm.	0.003 sq. mm.
			1/12 Oil	0.028 sq. mm.	0.0011 sq. mm.

* NOTE.—The square area here refers, of course, to the field embraced by the square opening in the blood-counting diaphragm.

Objective DD and eyepiece 2 we used only to count the leucocytes in the whole field. As it would be impossible to count also the more numerous red cells in so large a field, we contented ourselves by counting only a certain known fraction of the whole field. For this purpose we used the same objective DD but with eyepiece 4, into which, for the sake of still further reducing the field, we inserted a diaphragm with a square opening. This diaphragm is provided with a small handle and by means of the latter can be easily placed upon the circular diaphragm in the eyepiece. This small apparatus consists of a round metal plate in the middle of which there is an opening 3 millimeters square, which again is subdivided by means of two fine crossed platinum hair wires into four smaller squares. (See Fig. 1.) The square area of this whole aperture is only about $^1/_{20}$ that embraced by objective DD and eyepiece 2. We might perhaps give to this contrivance the name "blood-counting diaphragm."*



[Actual size.]
Fig. 1. Blood-counting Diaphragm.

After making these calculations we can proceed to the actual count. First with a low objective (AA Zeiss or No. 3 Leitz) we look for a place in the stained specimen where the corpuscles appear thin and evenly spread. Places where the red blood-corpuscles do not lie singly but are superposed upon one another, or where large empty spaces are visible in the field, are unsuitable for our purpose. Having found a good place, we use objective DD and eyepiece 2. With this we count all leucocytes visible in the field. Without moving the specimen we now exchange eyepiece 2 for eyepiece 4, into which we have previously placed our blood-counting diaphragm. We now count all the red cells visible in the whole square aperture or in one or two of the smaller squares. Then we reinsert eyepiece 2 and move the specimen by one field and count again. This is repeated until we have counted an area suffcently large to give reliable data. Generally speaking we found that counting about 6 square millimeters, corresponding to about 25 fields, was in most cases sufficient to insure accurate results. Having thus calculated the number of erythrocytes and leucocytes contained in one square millimeter, we divided the result thus obtained into the number of blood-cells contained in one cubic millimeter, as determined by the Thoma-Zeiss method. According to our considerations and premises the result of this division must be a constant factor.

We have laid down the results of our examinations in the following table:

TABLE B.

Number.	Name.	Hemoglobin, per cent.	Thoma-Zeiss count.		Number of blood cells in 1 sq. mm. of cover-glass specimen.		Factor.*		Number of blood corpuscles in 1 cu. mm. as calculated from stained specimen.**		Remarks.
			Red.	White.	Red.	White.	Red.	White	Red.	White.	
1	R.	23	2,670,000	12,800	4,811	34.3	555	373	2,405,500	13,720	Grave secondary anemia.
2	B. K.	68	4,850,000	152,000	9,820	388	494	391	4,910,000	155,200	Lymphatic leucemia.
3	H. E. J.	80	4,710,000	8.300	8,689	18.6	542	445	4,344,500	7,440	
4	H.	50	3,970,000	6 400	7.424	17	534	376	3,712,000	6,800	
5	T.	82	4,850,000	9,600	8.840	26 3	548	365	4,420,000	10,520	
6	H. G.	41	3,720,000	28,500	7,904	69.3	470	411	3,952 000	27,720	
7	B. F.	70	5.200,000	6,600	11 800	15 9	440	415	5,900,000	6,360	
8	T. G. W.	77	5,650,000	8.500	11,310	22	499	386	5,655,000	8,800	
9	S.	72	5.450.000	14,900	10,140	34	538	438	5,070,000	13,600	
10	I. M.	65	4.460,000	23.200	9.034	56	493	414	4,517,000	22,400	Sarcoma of lung.
11	B. R.	75	4,850,000	8,900	10,143	20.5	478	434	5,071,500	8,200	
12	H. F.	50	4,633,000	11,200	8 854	26.5	523	423	4,427,000	10,600	
13	C. di M.	78	5,480.000	9.060	10,050	22	545	411	5,025,000	8,800	
14	J. W.	75	4,450,000	11.000	8.448	29.3	527	375	4,224,000	11,720	
15	L. D.	65	5,065,000	8.080	9,973	18.6	507	436	4,986.500	7,440	
16	A. C. M.	85	5.837,000	7,800	11,843	19	492	410	5.921,500	7,600	
17	M. K.	85	4.900.000	9.500	9,878	25	496	380	4,939,000	10,000	
18	L. McK.	98	5,050,000	7.200	10,700	19 6	472	367	5,350,000	7,840	
19	M. C.	78	4,320,000	6,400	8,168	15.3	528	418	4,084,000	6.120	
20	H. N.	70	4.900.000	17,000	10,520	45	465	377	5,260,000	18,000	
21	N A.	32	3,966,000	9.730	8,118	28 1	488	345	4,059.000	11,240	Secondary anemia.
22	M. G.	35	3 757,000	11,700	7,697	30 3	488	386	3,843,500	12,120	do.
23	McD.	90	5.650,000	9.400	11,800	25 4	478	370	5,900,000	10,160	
24	P.	87	4,850,000	8,000	9,836	19	493	421	4,918,000	7,600	
25	G. W.	25	1.092,000	3,800	2,206	9.5	495	400	1,103,000	3.800	Pernicious anemia.
26	G. W.	30	1.900,000	4,400	3,608	10.6	526	415	1,804,000	4,240	Same patient one week later.
	Average factor						504.4	399 4			
	Average factor in round numbers						500	400			

* This factor is calculated by dividing the number of corpuscles in one cubic millimeter, according to Thoma-Zeiss, by the number of corpuscles found in one square millimeter of the stained specimen.

** The number of blood corpuscles in one cubic millimeter as determined from a count of the cover-glass preparation was found by multiplying the number of red or white blood cells respectively found in one square millimeter of the specimen by their respective average factors (500 for the red, 400 for the white cells).

On looking over the table we find that the final results of the counts made with the Thoma-Zeiss apparatus and of those made from the cover-glass specimen do not materially differ. In the counts of the red as well as of the white cells, figures differing by 10 per cent. or more are found twice only in each column, being 11 per cent. and 12 per cent. respectively for the red and 11 per cent. and 13.5 per cent. respectively for the white cells. The differences of all the other calculations lie below 10 per cent. and we see from the table that the total average difference is 4.8 per cent. for the red and 5.8 per cent. for the white. If one takes into consideration that the average error, even in most skilful hands, of the Thoma-Zeiss method is also about 2 per cent., we must grant that the method of counting from the stained preparation is for clinical purposes perfectly satisfactory and sufficiently accurate.

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*This diaphragm may, of course, also be employed for counting the leucocytes, when they are very numerous, as in leucemia. The blood-counting diaphragm is manufactured by Eimer & Amend, corner Eighteenth Street and Third Avenue, New York.

In further considering the table it strikes us that the factor for the white is uniformly $^1/_5$ smaller than that for the red. At first sight this appears strange, as we would expect that the relation of the number of red and white blood-cells found in one square millimeter to that found in one cubic millimeter would be the same for both kinds of corpuscles. If, however, we consider that the white cells on an average are considerably larger in diameter than the red, and that the latter determine the thickness of the stained specimen, the factor for the white cells must be smaller, as a single layer of white corpuscles is thicker than one of red cells.

The amount of hemoglobin seems to have no influence upon the resulting factor.

As the factors are all pretty nearly alike it seems justifiable to strike an average. This was done first by taking an average from all the factors of the red and white cells separately and also by taking the average of 3 highest and 3 lowest factors determined. In both cases, the result being about the same, we obtained in round numbers an average factor of 500 for the red and 400 for the white. These figures are easily remembered and facilitate calculations.

Our method of estimating the corpuscles would according to what has just been said be about as follows:

After preparing the cover-glass specimen and selecting a suitable area, as described above, we count with objective DD and eyepiece 2 all leucocytes visible in the field. After changing eyepiece 2 for eyepiece 4, into which we have placed our blood-counting diaphragm, all the erythrocytes visible in the entire square aperture or some part of it are counted, without having moved the specimen. Now we reinsert eyepiece 2 and move the slide for the width of one field. This procedure is repeated until about six square millimeters (25 fields) have been counted. From these figures the number of leucocytes and erythocytes in one square millimeter of the cover-glass specimen is calculated. The number of leucocytes in one square millimeter is found by simply dividing their total number counted by the number of square millimeters counted. With the red we proceed in the same manner except that we have to multiply the resulting quotient by the number which indicates how many times the field of eyepiece 2 is larger than that of the field embraced by the square aperture of the blood-counting diaphragm in eyepiece 4. In our case this number was 20.3. All we have to do now in order to obtain the number of corpuscles in a cubic millimeter is to multiply the numbers counted in one square millimeter by the average factors (500 for the red and 400 for the white cells). Lately we have modified the blood-counting diaphragm by substituting a glass disk for the metal part, leaving the arrangement for the square (3mm.) as before described, the square being formed by lines cut in the glass disk. In this way the blood-counting diaphragm enables us to count the white and the red cells without change of eyepiece.

As an example we will take the following case: In six square millimeters of the stained specimen we have counted 416 leucocytes; in the same six square millimeters the number of red cells counted with the blood-counting diaphragm was 2,336. There were therefore in one square millimeter $416 \div 6 = 69.3$ white cells. The number of red cells in one square millimeter must be $2336 \times 20.3 \div 6 = 7904$. The number of leucocytes contained in one cubic millimeter is therefore $69.3 \times 400 = 27{,}720$ and of the erythrocytes $7904 \times 500 = 3{,}952{,}000$.

Besides the fact that by means of a cover-glass count we are enabled to estimate the number of corpuscles from blood-specimens, of which we have no other count, our method offers, even when Thoma-Zeiss apparatus is at hand, certain material advantages.

First, the whole procedure is a very simple one. Neither pipettes nor diluting solutions are needed. Every physician can easily carry a few cover-glasses in his pocket and thus always has at hand all the utensils necessary for obtaining a specimen for counting.

Second, the method is a very rapid one. If we wish to determine the number of leucocytes only, we can reach an accurate estimate in five or even three minutes after staining. If besides the white the red cells also have to be counted, which of course is a more tedious procedure, it will take from ten to fifteen minutes. Those who have had experience in blood-counting will grant that an accurate count either of the red or white alone according to the Thoma-Zeiss method will with the necessary subsequent careful cleaning of the pipette take not less than half an hour, usually longer.

This method of cover-glass counting furthermore allows us to obtain simultaneously an idea about the condition of the blood as manifested in the stained specimen. It is easy, especially when counting the leucocytes alone, to combine a differential leucocyte count with it, which also tends to save time.

Finally, by this method we are enabled by reason of its rapidity and simplicity to count more frequently, from hour to hour if necessary. No one will doubt that this may occasionally be of great diagnostic and prognostic value in cases of acute appendicitis or similar acute cases in which pus may be suspected and in which we have to deal with a persistent or progressive hyperleucocytosis.

Curschmann[6] has again lately shown the importance and the great diagnostic value of repeated leucocyte-counts in acute appendicitis. In a similar manner, when we suspect internal hemorrhage (in extra-uterine pregnancy, etc.), frequent hourly or even half-hourly counts may perhaps give us valuable hints.

It is evident therefore that in counting from the stained specimen we possess a method that is at once simple, rapid and sufficiently accurate and therefore should recommend itself for clinical purposes.

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[4] Ehrlich: Die Anaemie (Nothnagel's Handbuch), 1898, p. 20.

[5] Louis Jenner: A New Preparation for Rapidly Fixing and Staining Blood. *Lancet,* Feb., 1899, p. 370. Jenner's stain consists of an alcoholic solution of a neutral (in Ehrlich's sense) precipitated mixture of eosin and methylene blue.

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MEDICAL PROGRESS.

SURGERY.

Suture of the Abdominal Wall.—The ideal method of approximation is that of layer-to-layer apposition by independent planes of suture. The ideal suture material is one which can be rendered sterile by boiling in water, that will remain sterile while in the tissues, and that will cease to exist in the tissues when healing is complete. These indications are not fulfilled by absorbable sutures of which catgut is the type, as it is almost impossible to be certain of its sterilization. C. Davison (Annals of Surgery, Mch., 1902) presents a new method which he has been using with very satisfactory results for a long time. The wounds are closed by suturing each layer with a continuous silkwormgut suture, the ends of which are left out at the angles of the wound to be removed by traction when healing is complete. This is easy of accomplishment, inasmuch as there is a tract of pressure necrosis around the stitch which renders it a matter of great simplicity. It is convenient for purposes of identification at removal either to color these sutures black with silver nitrate, blue with methylene blue, and so on, or to knot the ends. In general the advantages of this method of suture are as follows: (1) Certainty that all suture or ligature material placed in the wound has been made sterile by boiling in water. (2) Accurate layer approximation of tissue. (3) Removal of the buried sutures when healing is complete. (4) Capillary drainage from each layer. (5) Safety of intestines from injury during the application of the sutures. (6) Rapidity of application. (7) Minimum line of irritation on the peritoneal surface and consequent adhesions to the viscera. (8) Slight scar in the skin, there being no perforation of the skin by sutures, Halsted's subcuticular stitch being invariably used. (9) All of the advantages of a permanent buried suture without the danger of future irritation and extrusion of the knot. (10) The advantages of an absorbable suture without the danger of sepsis from the suture and without producing a nidus for septic germs from the blood-current during absorption. The claim for originality which is advanced is not in the use of a longitudinal suture, but in tightly and securely tying a buried longitudinal suture by the use of simple and ingenious knots, releasable by traction, which admit of easy removal when healing is complete.

Cancer of the Breast.—Carefully compiled results in operative cases are always instructive. A. M. Shield (Lancet, Mch. 8, 1902) presents those of sixty cases of cancer of the breast in a paper which will in its entirety reward reading. The conclusions will be of interest to all and are as follows: The risk of removing cancer of the breast by extensive operation is small and should not amount to more than 1 or 2 per cent. Sepsis may occur, but when it does it is a blameworthy error on the part of the surgeon. Early and free removal gives a prospect of years of freedom and in a good percentage of cases of good health and enjoyment of life. The cases which do badly are those of soft, rapidly-growing cancer in young, full-blooded women and those long-standing cases in which operation has been postponed until the skin and glands of the neck are widely infected. In a certain number of cases cancer of the internal organs, the liver for example, coexists or rapidly follows the operation and is of unsure, unsatisfactory explanation. The practice of early exploration by incision of small nodules and indurations in the breast is of the first importance and should be strongly urged upon the profession generally, especially upon those in general practice, who so often see these cases in their very beginnings and upon whom the great responsibility of prompt diagnosis falls. No one should undertake an operation for cancer of the breast unless he is capable and has had sufficient operative experience to remove thoroughly all lymphoid tissues from the axilla. The infected glands left in the apex of the axilla are the commonest sources of failure in the results from this operation. The prognosis of mammary cancer is still in doubt and sometimes instances arise which seem to falsify ordinary experience. Bad cases have no freedom from return at times. Early cases may show recurrence, but such exceptions do not invalidate the rule, "operate early, operate extensively."

X-ray Burns.—A study of the cases of accidental Roentgen-ray burns hitherto recorded has led to some interesting conclusions as reported by E. A. Codman (Phil. Med. Jour., Mch. 15, 1902). He finds that the frequency of such accidents has been much exaggerated owing to the wide publicity given to early cases. Only about 200 cases could be collected, less than one-half being serious and one-third occurring in X-ray workers. At a maximum estimate it may be said that not one patient in a thousand has been injured by the X-ray during the last five years and in the last year not one in ten thousand. Improved technic probably accounts for the fact that more than two-thirds of these injuries occurred during the first two years of the use of the method. The primary injury is to the nerves controlling the nutrition of the skin and there is no good evidence of involvement of the deeper tissues without primary interference with the skin. The important factors which contribute to the production of X-ray burns are (1) the intensity of the current used to stimulate the tube, (2) the quality of the tube, (3) the distance and time of exposure, and (4) the idiosyncrasy of the patient. The static machine seems less likely to produce injury than do other forms of apparatus. From the data of the reported cases it may be stated that no burn has been produced by an exposure equal to or less than the equivalent of five minutes at ten inches. The intensity of the burn is an inconstant factor which depends rather on the complex human organism than on the less complicated construction of the tube. It has been shown, however, that soft tubes produce a more intense effect on the tissues than do hard tubes. The time of the first appearance of symptoms varies from few minutes to three weeks or later in a few cases. As a standard therapeutic exposure the author suggests ten minutes at six inches from the terminal. The reason that most severe burns are reported on the abdomen or groin is undoubtedly due to the fact that these, being the thickest portions of the body, require the longest exposure. Two main lines of treatment are recommended, though for the most part unsatisfactory: (1) Physiological rest and mild poulticing, and (2) excision followed by skin-grafting, when the former has failed absolutely. As precautions in skiagraphing the author relies entirely on keeping the distance and time of exposure within proper limits. In therapeutic exposures the parts to be protected are covered by a lead plate and a grounded aluminum sheet may be used between the patient and the tube.

Tropacocaine in Spinal Anesthesia.—A series of forty-nine operations in which tropacocaine was used is reported by W. P. Illing (Jour. Amer. Med. Assoc., Mch. 22, 1902), among them being included three laparotomies, three amputations of the leg, one at the thigh, a herniotomy, plastic operations on cervix and perineum, and various minor cases. Although readily sterilized by boiling, the author believes that this reduces its effectiveness about one-half and he prefers heating the solution in an autoclave or hot-water bath at 176° F. for fifteen minutes and then allowing it to cool three hours. This procedure is repeated four or five times. In comparison with cocaine, the recovery from its effects is found to be much more rapid, although its action is slower (about ten minutes). There is usually no complaint of thirst, no heat, vomiting, nor perspiration, no marked effect on the pulse, no dyspnea. Relaxation of the sphincters is sometimes present. The author believes that perfect results can be obtained by the injection of one-sixth of a grain for an anesthesia lasting fifteen minutes. He also precedes the injection by a hypodermic of hyoscin.

Spina Bifida.—A new suggestion for operating in this condition is advanced by L. Freeman (Jour. Amer. Med. Assoc., Mch. 22, 1902). He employs fine silver wire for closing the aperture in the vertebral column. After placing the nerve structures and remnants of the sac within the canal, a No. 27 silver wire suture was, in the case reported, passed in continuous fashion from one side of the opening to the other through the periosteum, ligaments, and even through bone, the stitches being sufficiently close together to form a firm covering incapable of dispacement. The overlying soft parts were sutured with silkwormgut. The immediate result to date of writing was excellent.

Etiology and Treatment of Pruritus Vulvæ.—In connection with studies on the causative factors of this disease, L. Seeligman (Deut. med. Woch., Feb. 27, 1902) has been able to isolate and cultivate a diplococcus from all his cases within the last ten years. It resembles the gonococcus in shape and apearance, but differs in the manner of growth; it takes readily the Gram and the anilin stains. It is quickly killed by a 10-per-cent. guaiacol solution in vasogen, and this application has also given great success clinically. He has cured many primary and secondary cases by means of this remedy applied with a cotton swab on several successive evenings before retiring. If necessary a 15- or 20-per-cent. solution may be used, but is apt to prove irritating.

Carcinoma and Ulcer of the Stomach.—The somewhat frequent association of carcinoma with chronic gastric ulcer should always lead to a two-fold prognosis when an ulcer has been diagnosed. The immediate prognosis refers to the healing of the ulcer and the disappearance of the symptoms and is fairly good; the more remote prognosis considers pyloric stenosis, consecutive dilatations of the stomach, a frequent sequela of carcinoma, and is quite bad. G. Fuetterer (Jour. Amer. Med. Assoc., Mch. 15, 1902), in a review of the literature of this subject and in a study of his own cases, presents the following conclusions: If a carcinoma develop from a chronic ulcer of the stomach, it takes place from those edges which are most exposed to mechanical irritation by the contents of the stomach. It occurs more frequently in the pyloric region, less often in other parts. Gastro-enterostomy should therefore be recommended in all cases in which an ulcer or a scar narrows the pylorus; this would reduce the irritation by the food current and the severe friction necessary to produce a carcinoma will probably not occur. If gastro-enterostomy be not performed in such a case, the patient should be advised to eat slowly and a little at a time, to avoid hard or coarse food and to confine himself to liquid or semi-liquid foods and fats. In all cases of chlorosis and secondary anemia energetic treatment should be instituted as a prophylaxis against the formation of ulcers.

Double Rachitic Coxa Vara.—To the able classification of this lesion given by De Quervain, in 1898, one can add nothing. It is arranged as follows: (A) Congenital incurving of the neck of the femur. (B) Infantile incurving of the neck of the femur, (1) downward, (2) backward and downward; both are gererally rachitic. (C) Adolescent incurving, with similar malpositions. (D) The adult form, which is typically osteomalacic in origin. It will be seen that the chief basis of this classification is one of age. G. Gevaert (Journal de Chirurgie, Feb., 1902) says that it is not possible to find a case which does not fully fit into one of its subdivisions. In general, however, but two varieties of coxa vara are met with; the infantile, of rachitic origin, and the adolescent, which is accompanied by outward rotation and a diminution of flexion, the male sex being most frequently affected. Before the introduction of radiography, the diagnosis was a matter of considerable doubt; now, however, many cases are recognized which had formerly passed unnoticed. Hoffa writes: "Rachitic coxa vara is not a rare disease, although by no means as frequent as other rachitic deformities of the osseous system. Often one sees more or less elevation of the great trochanter with a marked limitation in abduction. In most cases one finds a diminution in the angle at the neck of the femur; occasionally this may be masked by a curve of the femoral diaphysis. So far as the treatment of the rachitic variety goes, spontaneous recovery is usual in the more moderate forms, as is the case in other rachitic deformities. In the graver cases it is occasionally necessary to have recourse to subtrochanteric osteotomy." The prognosis of coxa vara in the child is good. De Quervain states that since the rachitic discrasia ceases at five years of age, it follows that the nearer the infant is to this age the better is the outlook. In the adult, in whom the condition is often osteomalacic, the affection is painful and is apt to be progressive; it calls for immobilization and rest as well as for energetic therapeutic treatment during the painful period. In childhood, on the contrary, there is no pain, the disease is self-limiting, is helped markedly by a sojourn at the seaside and calls for absolutely no local treatment whatsoever.

Preventable Complications of Appendicitis.—The direct complications of appendicitis, resulting from a spreading of the infection, are enumerated by A. J. Ochsner (Münch. med. Woch., Feb. 25, 1902) as follows: Diffuse peritonitis, circumscribed peritonitis, infection of the tubes, ovaries and gall-bladder, gall-stones, liver-abscess, empyema and the rare infection of other serous membranes, such as the endocardium, the meninges and the synovial membranes, and, lastly, metastatic abscesses in different parts of the body, especially in the liver and parotid gland. To obviate all these, the ideal plan would be to operate within the first thirty-six hours after the onset, but this is often impossible, because the diagnosis is not made sufficiently early and because a surgeon is not always at hand. For those cases that are too late for the early operation and too early for the interval operation, the danger of complications may be considerably minimized by not giving the patients any food whatsoever per orem. The absolute rest which is thus insured for the bowels will permit the omentum to cover the seat of the inflammation and will close the ileocecal valve. When nausea exists, the stomach may be washed out to advantage; small amounts of hot water may be given at frequent intervals, and the strength should be kept up by four-ounce nutritive enemata every four hours. All purges and laxative clysmata are to be avoided.

Etiology of Sinus Thrombosis.—In many cases of injury to the head death follows in a strange and hitherto unexplained manner, as in the case of a patient whose history, given by A. Dorr (Münch. med. Woch., Feb. 25, 1902), states that he fell off a wheel, after which he complained of headache which barely permitted him to follow his vocation. The next day, however, coma, convulsions, rapid pulse and stertorous breathing developed. A provisional diagnosis of uremia or meningitis was made. Death occurred the day after and the autopsy revealed an extensive thrombosis of the cerebral sinuses. Experiments were then conducted on healthy dogs and it was found that by means of severe blows on the head without wounding of the soft parts, fracture of the skull, injury to the sinuses or suppuration, severe and eventually fatal cerebral symptoms could be induced which apparently had as their cause a thrombosis secondary to anatomical changes in the sinus endothelium.

Epiplopexy in Cirrhosis of the Liver with Ascites.—Talma of Utrecht was the first to suggest the establishment of a collateral circulation by means of adhesions between the abdominal viscera and the parietes for the relief of these cases. The first three operations of the twenty-eight cited in a paper by Gaston Torrance (Annals of Surgery, March, 1902) were performed in Holland as a result of these suggestions. At that time the operation was based purely upon the supposition that the ascites was due to obstruction of the portal vein by the cirrhotic condition of the liver and that if part of this blood-current could be turned into the systemic circulation the portal pressure would be lowered and the ascites would disappear. Of late, however, another theory has been added to this, that advanced by Rolleston and Turner, who argue that the condition is the result of a toxemia of the blood rather than a mere mechanical obstruction. The toxins are supposed to exert a lymphagogue action. The toxemia is due supposedly to the cirrhotic liver being unable to destroy the poisons which are continually passing to it from the alimentary canal, and these getting into the general circulation cause edema of the legs and ascites. A great deal of interesting experimental work touching on the problems which are as yet unanswered in relation to ascites has been done, notably by Morison and by Packard and LeConte. These observers short-circuited the blood from the portal vein into the interior vena cava, and the dogs on which this was done were subjected to different kinds of feedings. Very many interesting nervous symptoms were thus elicited, some of the dogs being alternately excited and depressed, others giving purely physical symptoms, such as asthenia and convulsions. No definite conclusion has been reached as yet as to the ultimate cause of the ascites, because in these experiments there was no return of the ascites, albeit the symptoms were in all probability due to toxic material passing into the general circulation. Nor has as yet any light been thrown upon the ultimate cause of hemorrhages from the stomach and bowel in cases of cirrhotic liver. A number of cases of ascites of this type have been cured by repeated tappings. MacDonald reports two cases, one of which recovered after having been tapped sixty times, 9,000 ounces of fluid having been removed. The other case was tapped thirty-one times, 8,600 ounces of fluid being removed; ultimately the ascites disappeared altogether. Drummond cites a number of cases of cirrhosis of the liver in which there was no ascites. Autopsy revealed extensive adhesions, extremely vascular in nature, between the viscera and parietes. These doubtless accounted for the absence of ascites and have a very important bearing on the prognosis of this new operation. Several of his cases had been cirrhotic for at least twenty years. Sappey gives the following as the normal collateral circulation of the portal system: Veins connecting the portal vein with the phrenic vein and vena azygos major and running subperitoneally between the folds of the hepatic ligament; another large vein running in the round ligament and connecting the left branch of the portal with the epigastric and other veins of the abdomen; the coronary veins communicating freely with both azygos veins through the esophageal plexus and the inferior mesenteric with the internal iliac by means of the middle and inferior hemorrhoidal plexuses. These veins become very much enlarged and in some cases succeed in diverting the blood-current when the portal vein becomes obstructed, but in the majority of cases they do not suffice and this collateral circulation must be increased. This is best accomplished through the omentum. The following conclusions may be summed up from the histories of twenty-eight cases: (1) Ascites due to liver cirrhosis can be cured by the establishment of an efficient anastomotic circulation. (2) Adhesive peritonitis produces adhesions between the abdominal contents and its parietes in which new blood-vessels form. If there be any demand for the new blood-vessels they remain permanently. (3) It is no longer desirable to treat the ascites due to cirrhosis by repeated tappings, if the patient be otherwise sound and in fair general condition. After one or two tappings have failed, operation offers the best chance of prolonged and useful life. Rolleston and Turner hold that the operation benefits the patient by somewhat diminishing the flow of blood through the liver. It may enable that organ to deal more satisfactorily with the blood passing through it and so reduce the toxemic condition of the blood, which is probably the important factor in inducing ascites. The increased vascular supply to the surface of the liver may by improving the nutrition of the hepatic cells enable them to undergo compensatory hyperplasia. This enables the organ more efficiently to perform its antitoxic functions and improves the symptoms. Muscroft and Ingalls say that results under both general and local anesthesia are about equal. Theoretically local anesthesia should be used. Shock is not marked; the patients are usually better after the operation than before it. Early operation should be advised. Frazier says the operation should be done under local anesthesia as the patients are usually alcoholics. Every case of cirrhosis accompanied by ascites is not suitable for operation, as success is absolutely dependent upon the retained functions of the liver cells. There is little doubt that the best results have been obtained by simply suturing the omentum to the parietes. Talma has sutured the gall-bladder also. Others have irritated the spleen and liver surfaces. It seems probable that inasmuch as the operation was designed to relieve the strain on the liver cells, one should attempt to divert as much of the current from the liver as possible. The results of this promising operation are as follows: 42.30 per cent. died, 57.70 per cent. recovered. Of these 38.47 per cent. have been cured; 7.70 per cent. have been improved; 11.53 per cent. have remained as they were.

Treatment of Perityphlitis.—If in any disease, it is in inflammatory processes originating in the vermiform appendix that early medical attendance is of importance, says C. BAUMLER (Deutsch. Arch. f. klin. Méd., Vol. 73). The patient generally makes two great mistakes before he sees a physician: (1) He remains active if the pain is not sufficiently severe to demand rest, and (2) he treats his supposed colic with laxatives. Both measures interfere with the processes which prevent spreading of the inflammation; and the laxative, instead of relieving the pain, will increase it and bring on vomiting without the desired stool or else there will be thin stools with, however, an aggravation of the general symptoms. In case the patient has been constipated for several days, even if scybala can be felt in the left iliac fossa, no contraindications to the use of opium or morphine exist if pain demand it and it is only when the tympanites is very marked and when fecal masses are found in the rectum, on digital examination, that from 100 to 150 grams of warm olive oil may be very carefully injected. Intestinal disinfectants possess very little value. The patients must abstain from all food for from twenty-four to forty-eight hours to insure all arrest of peristalsis and even large quantities of water are to be withheld; later on fluids, in small quantity and frequently given, form the appropriate diet. Morphine must be administered in sufficient amount to keep the patient quiet and free from pain; it may be combined with atropine; there is little danger of producing paralysis of the intestines with ordinary doses or of obscuring the picture. Much more satisfactory than all these medical measures would be the early operation before a true perityphlitis has developed, but the patients rarely present themselves sufficiently early and it is difficult to get their consent while the symptoms are still mild. Unquestionably an operation must be urged if a large pus focus be present and the factors which prove its existence are the gradual or sudden increase in size of the tumor, the gradual or sudden increase of pulse and temperature or increase of pulse with fall of temperature or the doughy condition of the subcutaneous tissue, with or without reddening of the skin in the neighborhood of Poupart's ligament. The proper time for operation cannot be measured by the number of days of illness.

Form of the Filled Bladder.—It has been taught for many years that the secretion of the posterior urethra, owing to the compressor urethræ, cannot flow out at the meatus, but gravitates back toward the bladder and that in the filled condition the bladder and posterior urethra formed one pear-shaped cavity, owing to weakness of the internal sphincter. That this is not so has been conclusively proven by M. VON ZEISSL and G. HOLZKNECHT (Medicin. Bl., Mch. 6, 1902), who took careful radiographs of the bladders of cadavers filled with metallic mercury. In all cases the bladder was shut off from the urethra at the beginning of its prostatic part and thus gave a globular shadow. The value of these experiments lies in the fact that they point out the fallacies of diagnosing anterior and posterior urethritis by the so-called "two-glass test."

Suprapubic Cystoscopy.—It is well known that cystoscopy through the urethra is often impossible with any degree of success. P. KRASKE (Ctblt. Chir., Feb. 8, 1902) had occasion recently to examine two bladders through a fistula leading above the pubic symphysis. He was surprised to find how good a picture of the organ he obtained and this led him to devise a cystoscope, the peculiarity of which is that its point is arranged like that of an ordinary trocar. His idea is to pass it through the abdominal wall into the bladder at this point and there make his examination. It appears to have the objection that a sharp-pointed instrument is moved about the interior of such a viscus as the bladder. If the procedure be followed at all, it appears to be far wiser to use an ordinary trocar and cannula of large size, to withdraw the trocar and to make the examination with the cystoscope through the cannula, which could be withdrawn, leaving the margins of the wound to clasp the shank of the cystoscope and prevent the reflux of the water used to dilate the organ.

Floating Kidney as a Cause of Obstructive Jaundice.—Movable kidneys are very frequently felt if examined for and many of them never give any disturbance whatever. Besides the ordinary train of symptoms which accompany a marked case, however, there may be present evidences of hepatic colic with jaundice; upon examination a tumor is palpable opposite the ninth costal cartilage which is mistaken for a dilated gall-bladder. J. HUTCHINSON (Practitioner, February, 1902) reports several instances in which this mistake was made and in which the abnormal condition of the kidney was undoubtedly responsible for the symptoms. An explanation for the cause of this peculiar result is offered by Weisker, who believes that the obstruction to the flow of bile is due to the kinking of the cystic duct by traction exerted by the hepatorenal ligament. Hutchinson was unable to convince himself of this condition and suggests that the intimate relation of the duodenum and the kidney results in pulling down the second portion of the duodenum where the kidney is displaced and hence the gall-duct is drawn out of position and perhaps obstructed. He has seen a few cases in which such a condition was found upon operation, the symptoms entirely disappearing when the kidney was sewn in position.

Gauze Packing in Appendicitis Operations.—It was Mikulicz who concentrated attention upon the idea of obtaining gross cleanliness of peritoneal infected areas and the consensus of surgical opinion was soon in favor of the use of gauze packing for the purpose of keeping the infected surfaces apart. R. T. MORRIS (Med. Rec., Mch. 22, 1902) believes that the presence of gauze packing frequently causes the excessive exudation of lymph which may result in annoying peritoneal adhesions and lifelong discomfort to the patient. The presence of iodoform only adds to the misery and many a patient has died of iodoform-poisoning rather than of septicemia. Furthermore, its use usually leaves a weak point in the abdominal wall inviting the development of ventral hernia. The worst feature of gauze packing, however, is its tendency to do what any foreign body would do in the same place—it depresses the patient's general resistance and prolongs if it does not sometimes cause the condition of shock. The production of phagocytes is a natural vital process and, like other natural vital processes, demands an abundance of energy for its accomplishment. The tendency at the present time is to use as little as possible in the form of drainage materials. If the greater part of the toxic material be removed, the lymphatics and leucocytes will attend to the rest better than can the surgeon with any complicated device. Sometimes, however, the amount of oozing necessitates the employment of a small drain or the infected peritoneum may secrete serum so rapidly and abundantly that it must be led externally by means of drainage, but this may be so small that it will not cause the patient any discomfort and will not interfere with the practically complete closure of the abdominal wound. The statistics of surgeons who do not use gauze packing, while being fully as good or even better than those who do, have been unjustly cited as arguments that severe cases had not been dealt with when gauze was not used.

Aseptic Surgery.—The remarkable advance which has been made in surgery during the past two decades has been due to the appreciation that cleanliness is the important factor in all operations. To destroy all germs has been the ideal of the antiseptic surgeon who has an abiding faith in the ability of Nature to repair wounded tissue if only obstacles to repair be removed. C. McBurney (N. Y. Med. Jour., Mch. 22, 1902) after many years of close observation believes that much better results can be obtained by following the aseptic method, by which all bacteria are removed from everything which is to come in contact with the wound, the entrance of bacteria into the wound is prevented and the creation of any condition favorable to germ life is avoided. All instruments and dressings are sterilized by heat alone. The site of operation is cleansed in the most gentle manner. Twelve or twenty-four hours previous to the operation a soap application is made as follows: A piece of Castile soap is boiled in a little water till it becomes soft. It can then be spread like an ointment upon gauze which is applied directly to the area till the time of operation. A little soap and water are then used and removed with sterile water and ether. The sweat-glands and hair-follicles always contain bacteria which cannot be removed even by strong chemicals without destroying the skin, and they had better be left alone. The sterilization of the hands is the next important step and no one professes to be able to thoroughly sterilize them for more than a few moments at a time. Rubber gloves, therefore, should always be used. He enumerates as unnecessary appliances caps on the head, respirators before the mouth and complicated basins with foot attachments. The removal of all blood-clots and tissue débris, care being taken to bruise the exposed parts as little as possible, is a feature upon which considerable stress is laid. Complete aseptic work demands that wounds should be treated with the utmost care and delicacy. In the aseptic treatment of septic wounds it is entirely wrong to believe that a little more infection can do no harm. The same care should be observed as in clean wounds. When drainage is necessary it is much better to change the dressings frequently, so that there can be no accumulation of pus and serum, rather than to depend upon antiseptic and stimulating dressings. The surgeon must really believe that most wound diseases are preventable ones, that by strictly living up to his principles he can prevent them, and that no temptation is strong enough to induce him even momentarily to forget his creed. Painstaking attention must be given to detail.

Acidulated Alcohol in Surgery.—Despite strictest obedience to the laws of asepsis and antisepsis in the management of wounds united by primary intention, evidences of infection will at times present themselves to the chagrin of the most careful surgeons. L. de Gaetano (La Reforma Medica, Mch. 4, 1902) has found his greatest success in the treatment of surgical wounds through the use of acidulated alcohol in the proportion of 100 grams of alcohol to 20 drops of acetic acid. This, in his experience, is not only microbicidal, as proven by bacteriological examination of tissues and sutures before and after its application, but also has the advantage of producing a condition of dryness unfavorable to the growth of bacteria. Prof. D'Antona's method of suturing is advised, namely, by having a needle at each end of the suture and passing it always from within outward, thus obviating the possibility of carrying infection from the deeper strata of the skin to the subcutaneous tissues. Gaetano details his method as follows: (1) The sutures should be kept in acidulated alcohol during the operation and dried with sterile gauze just before using. (2) As soon as the operation is finished, the surface of the wound should be bathed with acidulated alcohol and rubbed with gauze saturated with the solution, a gauze dressing, the first layers of which are saturated with acidulated alcohol, being applied. (3) After two days this procedure should be repeated. (4) On the fifth day the wound should be bathed with the solution, stitches removed, and dressing reapplied; the first layers, as before, being saturated with alcohol.

Histology of Intestinal Stenosis.—In that portion of the intestine above a stenosis there is often a thinning out of the wall as well as a hypertrophy. At first there is the compensatory hypertrophy for the excess of work demanded of it, and as this demand increases there comes a time when it cannot respond and then commences the period of atrophy. Again, one will meet with an atrophic condition where one would expect to find hypertrophy. M. Patel (Rev. de. Chirugie, Mch. 10, 1902) believes that the histologic changes depend upon the conditions which produce the stenosis. The intestinal wall is hypertrophied when it is thickened more than normal, resistant to the finger and not depressible. This is not to be mistaken for the edematous condition in the wall above a recent stricture. To comprehend the production of the thickened condition one must understand the conditions in both extraperitoneal and parietal stenoses. Those of extraperitoneal origin produce simple dilatation or a hypertrophy. (1) Dilatation occurs in the course of a tuberculous peritonitis which produces a stricture, a diverticulum or an agglutination of loops of intestines, so that there is an intestinal dilatation often exaggerated and often reaching up to the duodenum. In all these conditions the caliber of the gut is diminished and the intestinal wall is thickened, normal or thinned. (2) Hypertrophy, usually the agent which produces the simple stricture, continues to be active for a long time; such as in the case of an old incarcerated hernia. Goullioud describes a case which had persisted for eight years in which the tumor appeared to be the stomach, so great were the dilatation and hypertrophy of the gut. In parietal stenosis there will be found simple dilatation as well as hypertrophy. Hypertrophy of the intestinal wall subjacent to a tuberculous stenosis is always present. The stenosis starts from a tuberculous ulcer in the mucous membrane and the thickening of the intestinal wall at times will extend as high as ten centimeters above the seat of the original ulceration. This condition is found also in ulcerations from trauma, syphilis, simple inflammation, dysentery, intussusception, but almost never after typhoid because of the direction of the ulcer. (3) Dilatation simple without modification of the intestinal wall is a very rare condition. In benign tumors such as myomata it is possible to have considerable stenosis without any change in the gut either above or below the stricture. Tallon described a similar condition in a case of polyadenoma of the intestine. In conclusion the author gives the following as the results of his investigations: (1) Below an intestinal stenosis the gut is often thickened; the seat, degree and age of the stenosis bear no relation to this thickness; this seems always to coincide with an actual lesion of the mucous membrane. (2) The pathological anatomy shows that the hypertrophy is formed of diverse elements, namely, (*a*) by a pathologic infiltration of the muscle fibers in which the fibers are solitary, dissociated, and of increased thickness; (*b*) throughout by a more marked infiltration of the cellular layers of the wall, subserous or submucous. (3) It does not contradict the physiological fact of a compensatory muscular hypertrophy. It is a false hypertrophy; this is a lesion of the wall of the gut of which the point of departure is at the plane of the ulceration of the mucous membrane. (4) From the point of view of the operator, the question would be whether the thickening below the stenosis would make any difference in the strength of the intestinal wall. The hypertrophied segment should be considered a result of the disease process, because in resection the sutures must be passed through healthy tissue and in consequence all hypertrophied intestinal wall should be removed.

Simultaneous Fractures of Both Clavicles.—Cases of this kind are rare and are generally the result of direct or indirect violence and cause so little functional disturbance that the patient has long since forgotten the accident that produced the trouble, according to C. Féré and E. Papin (Rev. de Chirurgie, Mch. 10, 1902). If a case of simultaneous fracture of both clavicles be carefully examined, it will be seen that the fractures are not symmetrical; one cannot readily see how two blows can strike both clavicles symmetrically, and indirect trauma will not act symmetrically when inflicted from different directions. But one must admit the possibility of symmetrical fractures from muscular activity without symmetrical action, although no such case has been observed. Fractures the result of muscular action are less painful and one cannot admit that they may occur unknown to the patient; still less that they produce only a slight appreciable modification of function. The ordinary mechanism of fracture of the clavicle does not explain the existence of symmetrical fracture of both clavicles which exist unknown to the patient. Velpeau reports a case of a patient, thirty-five years old, with a fracture of both clavicles at the junction of the middle and inner thirds, without union or much overlapping and unknown both to the patient and to his family. The literature on this question is very scant. Velpeau and the author both believe that one must consider this condition to be of congenital origin. The question of trauma at birth due to forceps is ruled out as cases are reported in which the fractures have occurred and forceps have not been employed. The author thinks that during intra-uterine life there may occur convulsive muscular action which causes the symmetrical fractures of both clavicles.

Proximal Ligature in Traumatic Aneurism.—The usual teaching touching on the treatment of this condition is that the tumor should be incised and ligatures applied to the ends of the artery when found. Erichsen, in his recent tenth edition, goes so far as to say that a departure from this principle of treatment will probably result in death from gangrene. That the difficulty of this classic procedure is paramount will be doubted by none who have undertaken it, and particularly is this true of those aneurisms accompanied by the widespread lesions caused by high-velocity bullets. Cecil Birt (Brit. Med. Jour., Mch. 15, 1902) cites six cases of traumatic aneurism treated by proximal ligature. They were as follows: Diffuse traumatic axillary aneurism caused by a Mauser bullet; similar aneurism of the axillary; the third lesion was similarly caused and occurred in the brachial; the fourth was a traumatic popliteal aneurism, the case being that of a guardsman who sprained his left knee while going up Majuba Hill; the fifth was also popliteal, but was caused by a bullet-wound behind the bones of the left leg; the sixth was that of the upper third of the radial artery, induced by a Mauser bullet which broke both bones. In all cases proximal ligation was practised. All the wounds ran an aseptic course and the results were in each case all that could be desired.

GYNECOLOGY AND OBSTETRICS.

Combined Extra and Intra-Uterine Pregnancy.—A case of this kind is reported by H. P. Perkins (Boston Med. & Surg. Jour., Mch. 20, 1902). The patient passed her regular menstrual period without flow, and three weeks later had sudden sharp pains, cramp-like in character, low down in her right side. There was no nausea, no syncope, no evidence of shock. Three days after this attack there was no abnormal sensation beyond a feeling of slight pressure and fulness near the site of the original pain. Bowels and kidneys were normal; temperature 100.6° F.; pulse 110. There were slight dulness and tenderness just below McBurney's point. The uterus was found to be in normal position, a little high, fairly movable and enlarged. Adnexa of left side normal. At the right side vaginal examination revealed a boggy, sensitive mass, extending from the uterus to the pelvic brim. The patient had been sterile for several years, but practically the only classical symptoms of extra-uterine pregnancy were this fact and the sudden pain. There had been no bloody vaginal discharge, no decidual remnants. The uterus was evidently pregnant, and was not bound down or pushed to one side. The character of the onset, the pain, the slight dulness on percussion and the peculiar feeling in the vault suggested hematocele. On median abdominal incision over twenty ounces of fluid blood and some clots escaped. A mass of adherent tissue was broken through and a bleeding-point found in the right tube, which was enlarged and ruptured close to the uterus. Notwithstanding great care in the manipulations the uterine fetus could not be saved. Flowing and pain began five days after the operation. The uterus was dilated and curetted, the remains of an eight-weeks' fetation being removed.

Acetonuria in Pregnancy.—The metabolic changes incident to pregnancy would naturally direct one's attention to the index of metabolism, the urine. The significance of acetonuria in general not being well understood, such an investigation as that undertaken by Max Stolz (Archiv f. Gyn., Feb., 1902) in "Acetonuria in Pregnancy, Childbirth, and Puerperium," is highly welcome. He finds that a slight acetonuria corresponding to the physiological and found in pregnant women is not constant and is quite variable. Increased acetonuria is frequently found in the course of pregnancy, lasting for one, two or three days, without any symptoms or pathological causes. In the majority of cases during childbirth there is increased acetonuria. The longer the labor lasts the more frequently does acetonuria occur and the more abundant it is. In primiparæ it is more constant and greater than in multiparæ. During the first three days of the puerperium, occasionally during the first four days, it is considerably increased. More seldom it appears greatly increased later in the puerperium. The increased acetonuria of the puerperium is, as a rule, closely connected with the same condition during parturition. The influence of the establishment and the continuance of lactation upon this condition requires further investigation. Increased acetonuria in pregnancy and parturiton is worthless as an index of the death of the fetus. It is a physiological manifestation, without any pathological significance or cause. It is explained by the alteration in fat metabolism during pregnancy and the succeeding states and, corresponding to it, is of irregular and transitory duration.

Epignathus.—A specimen of this rare anomaly, which has been described as "a twin monstrosity in which the parasite is united to the superior maxillary bone of the autosite," was recently shown by C. Jewett (N. Y. Med. Jour., Mch. 22, 1902). These monstrosities present essentially the same structures that are found in dermoid cysts and their nature and origin are substantially the same. The author believes that they are developed from abnormal infoldings or inclusions connected with the hypophysis duct, which is an evagination of the pharynx to form the anterior lobe of the pituitary body.

The Causes of Eclampsia.—So numerous and varied have been the theories advanced as to the causation of eclampsia gravidarum, that it would be difficult to conceive of any new explanation, yet there is an element of originality in the experimental and critical investigation prosecuted by Blumreich and Zuntz and set forth in "Contributions on the Pathogenesis of Eclampsia" (Archiv f. Gyn., Feb., 1902). They experimented on pregnant dogs and found that these animals are more susceptible to the convulsive action of creatin than non-pregnant dogs, thus demonstrating in the former a greater irritability in the cortical motor cells. In this experiment the creatin served as an index of the irritability of the cortical cells; the investigators did not intend to prove that it is creatin that is the cause of puerperal convulsions. They conclude that a series of poisons are at work in the same way; that probably other stimuli, possibly mechanical, have the same effect. They claim they have sufficient evidence to conclude that the same hyperexcitability of the cortical cells, together with the presence of irritant poisons, lies at the basis of eclampsia in human beings. The facts of pathology show a certain tendency during pregnancy to diseases of the motor zone. Besides eclampsia, which is not infrequent, one case occurring in four or five hundred pregnancies, these are also met with tetany and chorea. They cite the observation of Windscheid that whenever a woman is attacked with tetany, it is during pregnancy or the puerperium. Likewise the phenomena of chorea, when they appear in an adult woman, do so almost always during the condition of pregnancy and disappear with its termination. Chorea, an ordinarily benign disease, acquires under the influence of pregnancy a character that makes it frequently a direct menace to life. During the pregnant condition much weaker stimuli are necessary to evoke convulsions than during the non-pregnant condition. It has never heretofore been affirmed that during pregnancy, in the constitution of the cortex of the brain itself, there is present a particular contributing cause which makes the stimuli so much more effective and dangerous. The question hinges partly, therefore, on this, Are there in the cortex certain characteristic changes that lie at the basis of the convulsions? Since in pregnancy there are appreciable variations from the normal blood distribution in the body, the authors incline to the thought that perhaps the increased supply of blood sent to the reproductive organs might lead to an imperfect nutrition of the cerebral cortex and occasion an alteration in the cells which would increase their irritability. At the same time there would be a heaping up of the products of metabolism, which would include the toxic substances aforementioned. In the particular condition of irritability of the cortical cells that is present in eclampsia, it needs no search for any special stimulus or class of stimuli to arouse it, for it may be aroused by all possible kinds of stimuli or combinations of them.

Placenta Previa.—A study of this condition by J. Clarence Webster (Jour. Obst. and Gyn. Brit. Empire, Mch., 1902) is summarized as follows: The causes are low implantation of ovum, development of chorionic villi on the decidua reflexa, forming a reflexal placenta or a combination of these two. Reflexal placenta is probably a frequent cause of abortion and miscarriage by degeneration and thinning leading to hemorrhage. A case which reaches full term is generally one of low implantation of ovum; if abortion take place in the later months it is probably reflexal placenta. In all cases of placenta previa hemorrhage may result from causes independent of the position of the placenta. In many cases of accidental hemorrhage, a reflexal placenta is probably present.

Symphysiotomy.—From experiments on twenty-eight female cadavers taken at random, A. C. Sandstein (Jour. of Obst. and Gyn. Brit. Empire, Mch., 1902) finds that 6 centimeters of separation is all that can be allowed, and this increases the true conjugate only 1 centimeter (⅖ inch); therefore the operation is useless if the true conjugate is less than 7 centimeters The child, of course, must be living. Walcher's position is necessary to get the above increase. Sometimes there is a tendency to unequal movement on the two sides of the pelvis, and this must be counteracted as it may cause injury to the ligaments or viscera. The knife should have a broad blade, and the symphysis must be completely divided; but if the subpubic ligament be left, it prevents tearing down into the vulva. Ossification of the cartilage does not occur—at least, was not found even in subjects over seventy years of age. Sometimes the joint, not being in the middle line, is missed and the bone cut, and this often results in necrosis. Localized septic infection and death from sepsis have resulted so often that extremely rigid asepsis must be carried out, and a previous foul vaginal discharge is a contraindication to the operation.

Abortion in Pulmonary Tuberculosis.—By many authorities pregnancy is believed to exercise an unfavorable influence upon the course of tuberculosis, hence the question of its interruption by artificial means has arisen, the measure finding a certain number of advocates in France, Germany, and Italy. G. Zanoni (Gazz. degli Osped., Mch. 2, 1902) maintains that, in general, abortion should not be induced after the third month, exceptionally in the fourth. During and after the fifth month the usual indications in the non-tuberculous should be observed, pulmonary tuberculosis alone not justifying so grave a procedure in the later months. Tuberculous cases of more recent origin, of from four to six months' duration, are regarded as most promising; rapid, toxic cases, with anemia, anorexia and adynamia urgently demand the operation and benefit from it. Evidence of pyogenic invasion and tuberculous cachexia antedating pregnancy are contraindications to the measure. In those for whom the operation is contemplated the pulse should not exceed 100, taken in the morning while the patient is in the horizontal position after five minutes' complete rest without coughing; and the temperature should not be, during a period of three or four days' observation, higher than 99 or 99.3° F.

THERAPEUTICS.

Lupis Vulgaris.—Two cases of lupis vulgaris successfully treated with urea pura and the X-rays are reported by E. Swales (Lancet, Mch. 8, 1902). The dose of the urea was begun at 20 grains three times a day and gradually through about nine months of treatment increased to 120 grains three times a day. During this same time the patients were subjected to X-ray treatment with the result that the cure was more rapidly esablished in these two severe cases than is usual with the X-rays alone. The points which the author emphasizes are (1) the use of a low-pressure tube, *viz.*, six inches; this does not produce any severe dermatitis in the neighboring healthy skin; (2) the comparatively short duration of the treatment is essential and close attention must be given to the importance of general health, lungs, heart, emotional condition and anemia. His cases without cure were puckering of the skin and unsightly contractions, which were commonly seen in the days when scarification was considered the best means of treatment. The objection to urea is that it is very expensive.

Corrosive Sublimate in Pertussis.—Fifty-six cases treated with this drug furnish the material for a paper by C. Calabro (La Pediatria, Year X., No. 1, 1902).

Treatment consists in painting the throat with sublimate and sodium in the following proportion:

Corros, sublimate	.50	(gr. viiss)
Sodium chloride (chem. pure)	.10	(gr. ij)
Distilled water	1000.	(℥xxxiij)

M. and filt.

All accessible parts of the pharynx, epiglottis, tonsils, etc., should be painted with a soft, long-handled brush dipped in this solution, from once to three times daily, according to the severity of the case. The writer advises that the patient be fed before painting to prevent irritation of the empty stomach by the small quantity of the solution which is swallowed during its application and to obviate the possibility of local disinfection being neutralized by ingestion of food immediately after the painting. Of the fifty-six cases, ranging from four months to thirty-three years of age, thirty-nine were cured with one daily application, and seventeen more serious cases with complications received two or three daily applications, supplemented by the remedies commonly used in pertussis. In all a cure was effected in from ten days to one month. The value of this method of treatment is believed to depend upon sterilization through the corrosive sublimate (this, too, diminishing the risk of contagion) and the action of sodium chloride rendering the secretions more fluid, thus facilitating their expulsion and diminishing the number of paroxysms. As a prophylactic measure for those who come in contact with the patient, daily applications of the solution to the throat have been found useful.

Dionine in Whooping-Cough.—Among those who have obtained good results from the administration of dionine in whooping-cough are L. Gottschalk and R. Schmidt (Bull. gén. de Thérap., Mch. 8, 1902). The former states that while the duration of the disease is not affected the paroxysms are diminished notably in duration and intensity. Schmidt believes that he witnessed in addition a shortening of the course of the disease. A useful combination in pertussis and in bronchitis, pneumonia and respiratory disease in general, consists of dionine and creosotal. An advantage which dionine possesses over morphine is that its sedative influence is not accompanied by any inhibition of expectoration.

Treatment of Osteo-arthritis of the Spine.—The treatment of this condition is of more importance than is commonly supposed. The disease is probably in part a trophic process; hence all debilitating medicines and methods must be avoided. This includes various depressing so-called antirheumatic remedies, also courses of baths. The general treatment, writes J. E. Goldthwaite (Boston Med. & Surg. Jour., Mch. 20, 1902), should be nourishing and stimulating. Good elimination is essential. Extra diet, stimulating bathing, massage of unaffected parts, electricity in a mild current, are all of value; dry heat is useful if not used too often. Iron, arsenic and strychnine suggest themselves. Codliver oil and medicinal doses of alcohol are recommended. The mechanical treatment consists of some form of support which will limit the motions at the seat of disease. Complete fixation of the spine is indicated if the symptoms be acute. Simple recumbency is not enough, as considerable spinal motion is still possible; it is wiser to use a plaster jacket or one made of stiffened leather. The jacket can best be applied with the patient standing and assuming the most erect position possible without pain. Suspension, forced hyperextension, or any other method of correction of the position is not indicated, as they would all produce strain or pressure on the diseased areas. If much deformity exist the jacket should be reapplied every one or two weeks until the deformity has been corrected as much as possible. In subacute or mild cases a support less rigid than a jacket suffices; it may consist of a light brace with uprights in the back made of light steel, or a corset made of heavy webbing reinforced with flexible steels. At times adhesive strapping or a swathe pinned tightly about the body may give relief. Local warmth is always agreeable. Goldthwaite describes in detail the behavior of the different types of spondylitis deformans under treatment.

Dionine in Pulmonary Disorders.—As is apparent from the article by A. Scherer (Therap. Monatshft., Mch., 1902) the chief use of dionine in pulmonary disorders is to diminish irritation, so that the troublesome and in patients with a tendency to hemorrhage dangerous cough will disappear generally in a few days. The expectoration is not diminished, as happens so often with even small doses of morphine, and the pain is moderated, though not markedly in tuberculosis of the larynx. Since the cough is removed, the insomnia will disappear and the sleep is more prolonged and peaceful and with fewer sequelæ than with morphine. The author has had no experience with the drug in hemorrhage; he recommends a trial in the milder cases, but in the more serious ones recourse should at once be had to morphine. Disturbances of digestion, anorexia, vomiting or constipation do not occur and the patients do not seem to develop a tolerance, as is the case with morphine.

Methylene-blue as a Sedative.—The depressing effects of this drug noted when administered in cases of nephritis has led to its trial in various forms of mania and paretic dementia with reported success. Further observations of its effects are submitted by D. E. Hughes and E. Lovelace (Phil. Med. Jour., Mch. 22, 1902), who gave it in twenty-two cases. These were nearly all cases of wild excitement when the drug was used and in but six did it fail to produce a calmative effect which did not resemble the sedative action of other drugs, but seemed rather a natural quietude; the patients were relieved of excitation, but without dulness or hebetude. The effect was noted three or four hours after a dose was given and lasted from fifteen to twenty-four hours. In the majority of cases, one grain was given b. i. d. or oftener, hypodermatically; in the remainder two grains were given in capsule. In only one instance did depression result. In each case the patient slept well at night, but in none did it produce sleep during the day. The only unpleasant symptom which could be attributed to the drug was the vertigo noted in one patient. The development of abscesses was an annoying complication in the first cases, but was readily overcome by boiling the solution for hypodermic use. Administration by mouth was marked by total absence of all gastro-intestinal derangements. If future administrations confirm these results a valuable remedy has been discovered for controlling many patients suffering from incurable mental disease.

EYE, EAR, NOSE, AND THROAT.

Acute Catarrhal Conjunctivitis.—As a result of studies on the causes of this disease and the bacteriology of the conjunctival sac, the principal points of interest are summarized by P. C. Jameson (Brooklyn Med. Jour., Mch., 1902) as follows: The disease is probably not a bacteriological one in its etiology, but acute or more often chronic hyperemia of the conjunctiva is the exciting cause. The condition resulting from this vascular derangement is a change in the fluid constituent of the conjunctival sac and this in turn gives to organisms already existent in the sac, principally the staphylococcus epidermidis albus, a suitable nidus for rapid propagation.

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No. 111 FIFTH AVENUE, NEW YORK.

Subscription Price, including postage in U. S. and Canada

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LEA BROTHERS & CO.,
No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK.

SATURDAY, APRIL 19, 1902.

THE SOCIAL EVIL AND THE REPORT OF THE COMMITTEE OF FIFTEEN.

IT is well known that certain revelations made in the fall of 1900 concerning the appalling conditions of vice in the East Side tenement district of New York City which shocked the moral sense of the community led to the formation of the Committee of Fifteen.

This body of prominent, public-spirited citizens courageously undertook the task of suppressing certain evils which had long existed with the full knowledge of the police and had, as it appeared, been fostered by the connivance and complicity of the police officials. Largely through the instrumentality of this committee prostitution was expelled from the tenements of the East Side district, the tenement-house bill was created by the Legislature, the infamous "cadet system" of traffic in prostitution was exposed, many of its perpetrators punished and evidence was collected which led to the closure of many notorious disorderly and gambling houses in this city.

While a crusade against prostitution was in no sense the object of the Commitee's creation, yet the most conspicuous results of its work have been the suppression of certain revolting phases of this evil; it was eminently fitting, therefore, that the official announcement of the work accomplished in the interests of public morals and decency should appear in connection with a report on the social evil, with especial reference to the conditions existing in New York City.

The report is divided into two parts. The first is devoted to an historical résumé of the history of prostitution with the measures employed at different epochs and in different countries for its suppression or control. This part of the work, prepared under the direction of a subcommittee, is an admirably clear and comprehensive exposition of the problems involved in prostitution; the discussion of these problems is conservative in spirit and judicial in tone. From the medical standpoint, the criticism may be passed that the subject is approached from a too exclusively ethical point of view and that it constitutes a special plea against the official intervention of the public authorities in the regulation of prostitution by sanitary supervision; it may also be claimed that the physical evils which flow from prostitution are rather minimized below their just proportions, while an overshadowing importance is given to the moral aspect of the question.

The sanitary aspects of regulation are considered in detail, and this system is declared to be not only wrong in principle but condemned by its practical results. The superior advantages of what is termed the moral regulation of vice, in which is incorporated the sanitary features of increased hospital facilities and free treatment, are fully set forth.

"The fundamental opposition between moral and sanitary control" is perhaps too strongly emphasized. It may be admitted that a system of control based upon hygiene alone and which ignores the moral questions involved is indefensible. Prostitution distills a double venom, it poisons both body and soul; it has a moral as well as a physical side. Both sides of the shield should be kept in view in instituting measures for its control. The reglementarist in dealing with venereal diseases would sweep aside all ethical considerations which stand in the way of treating it as a purely sanitary problem. The policy of this movement encounters a strong hostility from the moral element in society. But instead of abrogating all sanitary control, a system should be devised in which the divergent, though not opposing, interests of sanitation and ethics should alike be respected. Certainly the Continental system of regulation does not represent the highest wisdom of sanitary science or the perfection of sanitary methods—certain odious features, such as the arbitrary arrest of women on suspicion, the inscription and licensing of prostitutes, might be eliminated with advantage. We believe that if the spread of venereal disease is ever to be checked and its ravages as a social plague stayed, it will be largely through the instrumentality of the medical profession; on the other hand, we believe that the source or causes of prostitution can only be reached and repressed by an improvement in the socio-economic factors concerned in its production and by developing all conditions which conduce to public morality. In other words, a union of both medical and moral forces constitutes the proper basis of an effective organization and plan of action in the prophylaxis of venereal diseases.

Part II. contains the conclusions and recommendations of the Committee, with an appendix setting forth the present conditions of vice in New York. These recommendations, briefly summarized, are as follows: "The better housing of the poor, purer forms of amusement, the raising of the condition of labor, especially of female labor, better moral education, minors more and more withdrawn from the clutches of vice by means of reformatories, the spread of contagion checked by more adequate hospital accommodations, the evil itself increasingly condemned by public opinion as a sin against morality and punished as a crime with stringent penalties, whenever it takes the form of a public nuisance." With a discrimination which is creditable to the good sense of the Committee, public provocation is recognized as the only tangible form of prostitution which can be reached by constitutional law, and the recommendation is further made that while all obtrusive manifestations of vice should be sternly repressed, houses of ill-fame in certain retired localities should be undisturbed, as long as they remain unobtrusive.

While these recommendations of the Committee are based upon wisdom and sound morality and are to be commended from any point of view, it requires a good deal of optimism to believe that they promise to yield immediate results in checking the spread of venereal diseases—in which the medical profession is chiefly interested. The social evil is a chronic disease and requires a chronic treatment. Influences which act as a regenerating force upon the morals of a community or a nation are slow in operation and the material conditions which affect the methods or means of living cannot be controlled or regulated. Even the Committee can only hope from the application of the above measures in dealing with the social evil, "for the abatement of some of the worst of its consequences at present and for the slow and gradual restriction of its scope in the future."

In our opinion not the least valuable outcome of the work of the Committee of Fifteen is this presentation of information respecting the social evil in a form which renders it accessible to the general reading public. There has always been what may be termed a conspiracy of silence upon the part of the public press, public educators, and religious teachers in relation to this subject which possesses such superior significance as a social danger. All knowledge of the social evil has been considered a sealed book to be opened only by the prurient minded or the curious. The attempt to popularize such knowledge is a step in the right direction. It is a reversal of the ostrich policy of society which shut its eyes to the dangers that threaten the social body and thinks by ignoring to escape them.

The facts which are embodied in this report on the social evil are well known to medical men; indeed, they are largely derived from professional sources, but it is a singular commentary upon the anomalous attitude of the public press toward such matters that while this report emanating from a committee of laymen is favorably noticed and commended to the reading public, a treatise covering the same ground, coming from a medical man, would be passed over in silence.

WHAT IS DIABETES? A STEP IN ADVANCE.

IN the MEDICAL NEWS of February 1st we published an interesting and highly suggestive paper by Drs. C. A. Herter and A. N. Richards on a form of glycosuria induced by the action of the active substance of the suprarenal gland, adrenalin.

The researches of Blum, Luelzer and Croftan have all established the fact that glycosuria follows the subcutaneous use of this principle, but we are indebted to more recent researches of Dr. Herter, the results of which were given before the New York Academy of Medicine and the Philadelphia Pathological Society last week, for a more complete understanding of the causes underlying this phenomenon.

Led by the fact that intraperitoneal applications of andrenalin were followed by greater amounts of sugar in the urine than were observed following other modes of application, Dr. Herter was brought to believe that this was because of a local action of the remedy on the pancreatic cells. This he proved by a new mode of experimentation, namely, the direct application of weak solutions of the drug to the pancreas itself by means of a brush. This painting of the pancreas regularly induced large amounts of glycosuric urine, whereas local applications of similar solutions to the spleen, the kidneys, the liver and the viscera were not followed by any marked glycosuria. It was observed at the same time that the pancreas became deep red in color, contrary to expectation because of the well-known blanching action of suprarenal substances. It was further shown that the glycosuria was more marked if the animal experimented on had been fed recently, thus having considerable carbohydrate material in transit between the digestive tract and the liver.

In attempting to explain this peculiar action of adrenalin upon the pancreatic cells, Dr. Herter was first inclined to believe that the results were due to the well-known vasomotor action of this substance, but decisive experiments proved this hypothesis untenable; increased blood-pressure was also shown to be a non-important factor and the conclusions finally arrived at were striking and far-reaching in their significance.

The clue to a rational explanation was afforded by the observations of Geppert, made some ten years ago, that in poisoning by hydrocyanic acid the striking change from blue venous blood to bright arterial blood (within the veins), known to Claude Bernard and some of the older physiologists, is associated with an increase in the oxygen in the venous blood and a great decrease in the carbon dioxide. That this phenomenon depends on the inability of the cells to take up oxygen from the blood is shown by the fact that in hydrocyanic acid poisoning the quantity of oxygen utilized in the organism is greatly diminished. On applying dilute solutions of potassium cyanide to the pancreas the organ becomes a brilliant red and is associated with glycosuria of rapid onset.

This idea of impaired oxidizing capacity led Dr. Herter to apply numerous reducing substances to the pancreatic cells by his method of local painting, and thus temporarily to deprive the pancreatic cells of their oxygen and probably of their oxidizing power. Sulphurous acid, carbon monoxide, benzyl alcohol, ammonium sulphide, hydroxylamine and paragallol, all well-known reducing substances, were tried and almost uniformly their local application to the pancreas resulted in marked glycosuria. Since adrenalin has been shown to contain pyridin-like bodies, Dr. Herter applied weak solutions of this alkaloidal base to the pancreas and obtained a slight glycosuria; piperidine, a closely allied alkaloid with much greater reducing power, gave rise to a very marked glycosuria; whereas the application of solutions of quinoline, a chemically intermediate body, gave rise to an intermediate grade of glycosuria. It was further shown that if adrenalin be oxidized and thus deprived of its reducing power by potassium permanganate, chlorine gas or other oxidizing agent, its application to the pancreas no longer gives rise to a glycosuria.

The application of strong oxidizing agents to the pancreas, such as potassium permanganate, chlorine water, chromic acid, and hydrogen peroxide, was *not* followed by glycosuria.

It seems almost conclusive, then, that an interference with the internal oxidizing power of the cells of the pancreas, is responsible in large part for the production of diabetes. There is probably a loss of relationship in many instances between the amount of reducing substances in the blood, some of which are manufactured in the suprarenal gland, and the oxidative power of certain enzymes elaborated by the cells of the pancreas.

THE THYROID IN NOSOLOGY.

After a phase of acute interest on the part of the general practitioner because of the promise of its presumed therapeutic effects, the thyroid gland seems about to drop back to a position of secondary importance. It is the usual pendulum-like swing of medical ideas, especially in the department of therapeutics and therefore should not occasion much surprise.

There is no doubt, however, that considerable knowledge as to the function of the thyroid has been gained and that even the present comparative obscurity of the subject promises to be fecund in farther advances of sterling scientific character. What has been learned recently has pointed particularly to the occurrence of functional derengements of thyroid secretion, some of them, as pointed out recently by Dr. Meltzer before the New York Academy of Medicine, due to inhibitory processes.

There seems to be no good reason to question that failure of development; and especially the condition known as infantilism, whether this be universal or limited to one system as the genital or reproductive, is usually associated with a defective thyroid gland or at least abnormally small thyroid secretion. The connection between reproduction and the thyroid is very suggestively illustrated by Prof. Gautier's work on the presence of arsenic and iodine in menstrual blood. While the normal blood of females contains no arsenic and only a trace of iodine, menstrual blood contains a very noteworthy amount of arsenic and considerably over four times as much iodine as does normal blood. Gautier has demonstrated that the thyroid gland is the main organ within the body the metabolism of which leads to the elimination of arsenic and iodine. It is well known that the thyroid enlarges during pregnancy and in many women just before the menstrual period. It may be that there is in women an abnormal production of arsenic and iodine just before menstruation and that these substances are eliminated at this time. A normal thyroid contains just about the amount of arsenic that is eliminated each month in the menstrual blood, so that there is a constant manufacture of this substance until a certain maximum is reached, when removal takes place.

The arsenic and iodine products of the body are, according to Prof. Gautier, used for the growth particularly of hair and nails. These grow more luxuriantly in man than in woman, hence there is less tendency to the accumulation of such products in males. Besides, the thyroid in the male does not seem to be so persistently active an organ as it is in the female. There are, moreover, good authorities who claim that there is a certain periodicity in male sexual function that may be attributable to this accumulative discharge. In a word, something of the explanation of certain vexed problems in sexual physiology may be suggested by these discoveries of Gautier's that have now been over a year before the public with but the single contradiction of Cery's work that does not invalidate them.

At the regular October meeting of the Harvard Medical Society of New York City (MEDICAL NEWS, Nov. 16, 1901) Dr. Perry called attention to a series of cases in which the symptoms of neuro-arthritism, rapid heart and disturbed menstruation, were associated with some inhibition of the normal body thyroidism, for relief was obtained by the administration of thyroid extract. None of Dr. Perry's cases showed any signs of intolerance and their other symptoms were relieved.

It is evident, then, that we are on the track of organic relations of the closest kind between the thyroid and the genital system. Another proof of this is to be found in the undoubted benefit, though unfortunately not as much as was at first anticipated, that accrues from the treatment of carcinoma of the breast by oophorectomy followed by injections of thyroid extract originally suggested by Beatson of Glasgow and tried by many surgeons with surprisingly good results.

It is well known that tendencies to obesity are often associated with certain phases of the sexual life. Just after puberty and after the menopause women are liable to put on weight, while in boys the obese tendency may be exhibited just before puberty. In these cases the use of thyroid gland has been found useful for the treatment of the affection. Obesity is sometimes associated with an instability of the blood-making organs that causes any attempt at reduction in weight by systematic lessening of the diet to bring on marked chlorotic symptoms. These cases of obesity are often considered absolutely hopeless of successful treatment. They are especially amenable to treatment with thyroid extract and according to French observers the use of arsenic in combination with regulation and limitation of the diet will bring decrease in weight without manifestations of anemia, if the reduction be not made too rapidly.

Although we hear less of the enthusiastic recommendation of thyroid extract for nearly everything under the sun, and a few other things besides, that characterized the therapeutics of a few years ago, there is a strong undercurrent of feeling founded on careful clinical observation and delicate scientific investigation which shows that some really important acquisitions to our knowledge have been made. There remains at the present moment much for the clinician to do in demonstrating the practical application and limitation of these recently acquired ideas. There is an excellent field for the hospital physicians of the country to demonstrate that work of a thoroughly scientific character out of the domain of surgery can come from our American hospitals.

ECHOES AND NEWS.

NEW YORK.

Resolutions on the Death of Dr. Munde.—At a recent meeting of the Medical Board of Mt. Sinai Hospital, the undersigned having been appointed a committee to draft resolutions on the death of Dr. Paul F. Mundé, reported as follows: *Whereas,* Dr. Paul Fortunatus Mundé, after a faithful service at Mt. Sinai Hospital of nineteen years, has been removed by an untimely death; and *Whereas,* His colleagues of the Medical Board had special opportunity during all these years to recognize in him the skilful physician and to esteem him as a devoted friend; *Therefore,* Be it resolved that the Medical Board of Mt. Sinai Hospital place upon its minutes this record to show its appreciation of the great loss which the Hospital has sustained; that it extend its sympathy to his family in their great sorrow, and that a copy of these resolutions be sent to them and be published in the medical journals of this city.

(Signed) { ALFRED MEYER, M.D.,
HENRY KOPLIK, M.D.,
HOWARD LILIENTHAL, M.D.

Resolutions on the Death of Dr. Edwin M. Pyle.—*Whereas,* It has pleased the Almighty to suddenly call from us our esteemed and respected colleague Dr. Edwin M. Pyle, and, *Whereas,* For several years past he had zealously devoted himself to the special field of otology, distinguishing himself in the hospital by his unselfish industry and superior skill as an operator, and winning in these meetings the esteem and admiration of his colleagues for his sincerity of purpose and genuine devotion to the advancement of this special branch of medical science, therefore be it *Resolved,* That, while we accept submissively the decree of Divine Providence, the members of this Section as associates in the field of otology and as coworkers in the New York Eye and Ear Infirmary to which deceased was attached, desire to record the sense of loss which they have sustained in the sudden taking away of their fellow practitioner, and, it is further *Resolved,* That the members of this Section extend to the family and friends of deceased their heartfelt sympathy and sincere condolence in their bereavement, and that these resolutions be spread upon the records and a copy be sent to the family and to the medical journals for publication.

(Signed) { JAMES F. MCKERNON, M.D.,
FRANK J. BLODGETT, M.D.,
JOSEPH KENEFICK, M.D.

Syllabus of Bacteriology.—This is the title of an excellent small manual issued free to physicians by the Palisade Manufacturing Company of Yonkers, N. Y. The publishers are to be commended for their good judgment and taste in this excellent treatise. It is an ethical and praiseworthy form of advertising.

Resolutions on the Death of Dr. Tucker.—*Whereas,* An inscrutable Providence has removed from our fellowship an honored member, Ervin Alden Tucker, A.M., M.D., suddenly, in his prime, with only the first sheaf of life's harvest garnered; and *Whereas,* The Fellows of the New York Obstetrical Society, from long association, have grown into a knowledge of his rare qualities and exceptional equipment for the high sphere of usefulness he had made for himself in his profession; and *Whereas,* As members of his own guild and calling, thereby entering into a juster appraisement of his skill and capacity, the Fellows of the New York Obstetrical Society especially esteem their departed brother for his unusually long, painfully laborious and self-contained preparation in the hospital wards; his tireless fidelity as observer and statistician; his methodical evolution of a technic in obstetrics; his soundness and directness as a teacher, carrying his formative influence through medical graduates of the last decade to bedsides far beyond his personal ken; his kindly, active, almost paternal interest in each individual of the large family of medical men he himself selected from the city hospitals and trained as obstetricians; his cohesive power in holding the hospital alumni in fraternal bond; his quiet, self-poised yea and nay which inspired in patients a merited confidence, marvelously rooted; his clean life; his high conception of the responsibility and dignity of the holy office of ministrant at the threshold of life; therefore be it *Resolved,* That the Fellows of the New York Obstetrical Society spread upon their records their pride in the fame of their honored Fellow, their appreciation not only of his individual work, but also of the spiritual power of his completed and crystallized life-lesson, which will ever be a stimulus to younger men in the profession; be it further *Resolved,* That a copy of these resolutions be conveyed to the bereaved family as a token of sympathy, appreciation, and consolation in that our brother, "though dead, yet speaketh."

(Signed) { E. C. SAVIDGE, M.D.,
J. C. EDGAR, M.D.,
G. L. BRODHEAD, M.D.

PHILADELPHIA.

Fire at Samaritan Hospital.—A recent fire at the Samaritan Hospital caused a damage of $500. In some unknown way it originated in the residents' rooms and was luckily confined to that part of the building, although many personal effects were destroyed.

Surgeons Sail for Europe.—Dr. John B. Deaver, accompanied by Dr. G. G. Ross, assistant-surgeon at the German Hospital, sailed for Europe April 8th, to be gone about two months. The leading clinics of London, Paris, Heidelberg, etc., will be visited. Dr. William M. Thompson has also sailed for Europe.

Ambulance Wrecked by Trolley-car.—An ambulance of the Pennsylvania Hospital, while conveying a case of uremia from the Broad Street station April 11th, was in collision with a trolley-car at Thirteenth and Spruce Streets. The patient, the physician in charge, the driver, and the horse were injured and the ambulance was wrecked. None of the injured persons was seriously hurt.

Federation of Day Nurseries.—The biennial conference of the above organization met here during the past week. It is of interest to note that the first day nursery in this country was established in Philadelphia in 1863. The age limits are three weeks and twelve years and a charge of five cents per day is made. In the summer excursions to the park are made weekly and last summer forty of the children were sent to Atlantic City for a week. The health of the children cared for has been uniformly excellent.

State Medical Examining Board.—This Board was reorganized at a meeting held April 1st by the election of Dr. Henry Beates, Jr., of this city, as president, and of Dr. Hiram S. McConnell of New Brighton, as secretary. The examinations for the coming summer will be held in Pittsburg and Philadelphia June 25-28, 1902.

Society to Prevent Tuberculosis.—The annual meeting of the Pennsylvania Society for the Prevention of Tuberculosis was held in this city April 9th. Provision was made for the wider distribution of literature designed to educate the masses as to how best prevent communicating the disease. Letters from various parts of this country and Canada, requesting copies of the tracts issued by the Society were regarded as indicating that the work of the Society is spreading beyond the bounds originally outlined. Dr. Howard S. Anders was chosen president, and Dr. A. H. Davisson secretary.

Glycosuria from Adrenalin Chloride.—Dr. C. A. Herter of New York, as the invited guest of the Philadelphia Pathological Society on April 10th, detailed some exceedingly interesting experiments made upon dogs for the purpose of investigating the question of glycosuria. Adrenalin chloride was at first used intraperitoneally, the injection of from three to five cubic centimeters being followed by the appearance of sugar in the urine. The duration of this glycosuria was twenty-four hours or less. The sugar of the blood in the animal used was found to increase very rapidly after the administration of the adrenalin, except when a partially starved dog was used when this increase was very slow. This led to the conclusion that the amount of glycogen in the liver exerted a strong influence upon sugar production. Some of the physiological and pathological changes caused by fatal doses of the drug were hemorrhagic pancreatitis, focal necroses, and intense congestion of the gut. After intravenous injection of adrenalin, with the production of glycosuria, the pancreas was examined microscopically, but no changes were found. The fact that intraperitoneal injections were much more effective in producing glycosuria than were subcutaneous or intravenous methods of administration led to the hypothesis that this was caused by the drug reaching the pancreas more directly. Acting on this hypothesis the pancreas of a dog was exposed and a solution of adrenalin painted upon the organ. This was followed in a few minutes by the appearance of sugar in the urine. A repetition of this, with control experiments, led to the conclusion that the glycosuria following the use of adrenalin is a passive glycosuria caused by changes in the pancreas. But how is this brought about? The first idea was that it was due to the vasomotor influence of the adrenalin. Experiments decided against this as there was no change in color of the pancreas when the adrenalin was given intravenously, and careful observations showed that a general rise in blood-pressure was not necessary for the production of glycosuria. Experiments with potassium cyanide led to the thought that the result was due to the lack of oxidation. Experiments with many oxidizing and with many reducing agents were then made, care being taken to corroborate these in each instance with controls. The result was that with powerful oxidizing agents no sugar was obtained, while with reducing agents sugar was made to appear in the urine. Interference with the oxidative function of the pancreatic cells thus appears to be the cause of the glycosuria. Dr. Herter advances no theory as to why this is caused. This theory would explain the rise of sugar in the blood during asphyxiation and the production of glycosuria after hemorrhage. On this supposition, if the reducing power of the blood be out of proportion to the capacity of the pancreas, glycosuria will follow. An interesting study would be to determine if reducing substances were found in excess in actual cases of diabetes. Dr. Herter stated that one of the most valuable suggestions arising from his experiments was that of the direct application of poisons to individual organs. He believes that experiments in that line will help much in solving many of the problems of physiology. Perhaps in this way may be located the origin of uric acid, glycuronic acid, and other little understood products.

Death of Noted Masseuse.—Miss Jessie Miller Ward, said to have been the first person in this city to teach massage upon a scientific basis, died April 6th in the Presbyterian hospital. Miss Ward entered the Women's Medical College here in 1899, but after two years' study her eyes failed and she was obliged to abandon hope of entering the medical profession. She then turned her attention to massage. Success in that work soon caused her to organize classes for instruction to the nurses of the Women's Hospital. Courses were afterward established in the training schools of many of the hospitals of the city. Three years ago Miss Ward published "Notes on Massage," a manual which gained extended recognition.

CHICAGO.

Money for Charity.—The German-American Charity Association has obtained donations amounting to $12,000 which will be distributed among the following charities: Alexian Brothers' Hospital, German Hospital, St. Elizabeth's Hospital, Chicago Maternity Hospital, Home for Destitute and Crippled Children, Visiting Nurses' Association, Chicago Orphan Asylum, and five non-medical charitable institutions.

Suspension of Undertakers.—The Commissioner of Health has suspended the licenses of two undertakers, Bernard McNeil, 2915 State street, and Jacob Winstein, 264 W. Fourteenth street, on charges of carelessness and violating the rules laid down for the interment of the bodies of scarlet-fever patients.

Prevalence of Scarlet Fever.—Scarlet fever has been for some months, and still is, more prevalent and more fatal in Chicago than at any time in the last seventeen years. Since the first of the year there have been 167 deaths reported from this disease out of a total of 7,318 deaths from all causes—a proportion of nearly 2.3 per cent. The nearest approach to this was in 1884, when the scarlet-fever mortality formed nearly 2.5 per cent. of the total. Last week there were 243 cases of contagious diseases reported, of which number 162, or exactly two-thirds, were scarlet fever. During March 644 cases were reported as against 156 in March, 1901.

Chicago Medical Society Celebrates its Semicentennial at the Auditorium.—Fifty years of medical practice in Chicago were reviewed by the speakers at the banquet of the Chicago Medical Society at the Auditorium, April 9th, celebrating the semicentennial of the organization. Dr. Alexander Hugh Ferguson, Vice-President of the Society, acted as toastmaster. Dr. N. S. Davis, who founded the Society in 1852, came for the speech-making, and warned physicians against attempting too many things in their practice. He said: "I have heard of doctors in Chicago who are attached to so many hospitals that it seemed to me that if they visited each one during the week they would accomplish nothing else. We, like the men in many other professions, are prone to attempt too much. A man should occupy the field he intends to cultivate and work it well, but he must not try to cultivate the earth."

The chair at the center of the speaker's table, which would have been occupied by the late Dr. Christian Fenger, who was president of the Society, was left empty and draped in black. Dr. Frank Billings gave an eloquent tribute to Dr. Fenger, and at his request the audience drank a silent toast to the memory of the departed member.

The proceedings took on the nature of a tribute to Dr. Davis. Every speaker directed a number of compliments to where he sat, half-hidden behind a vase of flowers, and when he arose to speak the applause lasted for several minutes. The three hundred banqueters drank his health standing, when he concluded his remarks. "My work is nearly over," said the aged physician, "and I find that I can do only a little every day and then rest in my comfortable home and wait for the end to come. I am happy that I have lived so long and have seen the growth of this Society from its small beginning to the 1,100 members it now has. I cannot attend your night meetings, but I can sometimes break over the rules, as I did to-night, for the pleasure of seeing you again. I thank you for your cordial reception and hope to see you all many times." Dr. Davis told of the start of the Society and the different crises through which it had passed. To show the way in which physicians were divided into warring factions when the city was young, he related the story of a man whose leg had been nearly torn off in a street accident. Several doctors of one clique had made preparations to hold the operation where the accident happened, when another faction arrived and succeeded in driving the first lot away from the patient. One physician of the time, he said, kept up his reputation with "thunder and lightning" pills.

Dr. J. T. McAnally, President of the State Medical Society, spoke on "Organization of the Medical Profession." He said the time has come when the medical societies must enlarge their scope. "Medical men are coming to believe that the scope of our societies if too narrow," he said. "We cannot longer ignore material and social interests of the members if we are to keep a compact organization. The matters of uniform fee bill, "dead beat" practice, offenders against the medical statutes, and other things can be taken up through the societies."

Dr. I. N. Danforth, one of the older members, gave a number of reminiscences of the early days of the Society, and the different methods of practice then in vogue. The medical paper of the evening was on typhoid fever, and was read by Professor V. C. Vaughan of the University of Michigan.

Illinois Medical Practice Act and Osteopathy.—The Supreme Court of Illinois says, in the case of People, to Use of State Board of Health, vs. Gordon, that it thinks it clear, from the several sections of the act of 1899 to regulate the practice of medicine in the State of Illinois, that the State Board of Health is authorized to divide those who desire to practise medicine in this State into two classes; that is, those who desire to practise medicine and surgery in all their branches, and those who desire to practise any other system or science of treating human ailments without the use of medicine or instruments. In this case, the party said that his treatment was a mental science. But he said, too, "I first make a diagnosis. Then I remove the cause for that condition by working and freeing the nerve force. . . . I get as near the muscles as I can. If a person is fleshy, it takes more force." He also flexed, or, as one witness said, bent the limbs. The Court declares that it is at a loss to perceive how it could be said that his own testimony did not tend to show that he did treat and operate on patients for physical ailments, within the meaning of Section 7 of the act, which defines who shall be regarded as practising physicians, within the meaning of the act, as including both classes above mentioned, and defines the practice of medicine as including all "who shall treat or profess to treat, operate on or prescribe for any physical ailment or any physical injury to or deformity of another." In short, the Court thinks that all the testimony tended to show that he practised what is known as osteopathy, at least, the treatment was of that nature. It says further that it hardly thinks that the large school of osteopathists and those who believe in their method and system of treatment, would be willing to concede that such treatment is no more than that which a trained nurse might administer. While it may be truthfully said that it is not the practice of medicine in the common acceptation of that term, it can not be claimed that it does not "profess to treat, operate on or prescribe for any physical ailment or any physical injury to or deformity of another," and certainly it cannot be insisted that such persons do not practise another "system or science of treating human ailments without the use of medicine internally or externally." Nor is the Court able to see how, under his own evidence, the position advanced could be maintained that he was exempt from the operation of the statute by the last clause of the proviso to Section 7; that is, that he was a person "who ministers to or treats the sick or suffering by mental or spiritual means, without the use of any drug or material remedy." Very clearly this provision, the Court says, means that those who pretend to relieve the ailments of others by mental or spiritual means shall not be considered within the act; but if this party, under the proof in this case, could bring himself within that exception, then every one who treats diseases without administering medicine, either externally or internally, could also be brought within the exception. Few, perhaps, if any, physicians attempt to treat the sick and suffering without appealing to the mental faculties, to a greater or less degree, in aid of the remedies they apply or prescribe; but that it not treating the sick by mental or spiritual means. Again, the Court says, that merely giving massage treatment or bathing a patient is very different from advertising one's business or calling to be that of a doctor or physician, and, as such, administering osteopathic treatment. The one properly falls within the profession of a trained nurse, while the other does not.

Western Ophthalmologic and Oto-Laryngologic Association.—The seventh annual meeting of this Association was held in this city April 10th, 11th and 12th, under the presidency of Dr. Christian R. Holmes of Cincinnati, Ohio. Several interesting papers were read and freely discussed.

Health Department Weekly Bulletin.—The weekly bulletin for the week ending April 13, 1902, is as follows: As compared with the week previous there was an increased mortality from all the chief causes of death except scarlet fever, pneumonia and violence. The total 562 deaths reported to the Health Department represent an annual rate of 16.10 per thousand of population as against 14.19 and 13.18 respectively for the previous week and the corresponding week of 1901, or more than one-seventh and more than one-fifth increase respectively. All the air-borne diseases are again as rife as before the March rains, and the high winds and dry surfaces give little present hope of relief. Street sprinkling by the traction companies is not obligatory under the ordinance until May 1st, but, as has been urged before by the Department, it should be begun every year as soon after March 1st as the temperature will permit. Householders who pay for hose privileges or who employ the private sprinklers could do much for the public health, as well as for their own individual comfort by utilizing the public water supply for this purpose to the limit. The City Hall janitor has set an example in this respect which should be generally followed throughout the city. Of the sixteen new cases of smallpox discovered and removed to the Isolation Hospital last week one was imported from Iowa and one from Springfield, Ill.; five others were cases contracted from exposure to the man Speller at the Zion College, discovered March 26th. At the close of the week 42 cases remained under treatment in the hospital, 10 had been discharged, recovered, and no death had occurred. Since January 1st there have been 128 cases treated with one death and 84 recoveries. As illustrative of the unusual prevalence and fatality of the contagious diseases, 10 deaths from puerperal fever are noted—the greatest number in any one week since weekly records were begun. Scarlet fever still prevails as an epidemic and the effect of the water pollution following the March rains is reflected in the increase of typhoid-fever deaths.

CANADA.

Extension to Hotel Dieu Hospital, Montreal.—The Sisters in charge of the above hospital have definitely decided to erect a new wing to the hospital. This will consist principally of private wards, as there has been a growing demand for these during the past year. In addition there will be a new operating-room and two special rooms for the use of the X-ray. The additions will afford increased facilities for the medical students of Laval University. The question of another wing for contagious diseases as advised by Archbishop Bruchesi is under consideration.

Increase of Insanity in Montreal.—To the number of two a day the Mayor of Montreal has been committing persons to the insane asylums. This is a startling statement coming from so prominent an official of the Canadian metropolis. Is insanity really increasing in Montreal, he inquires, or do outside people send in to friends in the city those so afflicted in order that they may receive the charity of the city? As all sent to the asylums on a city order have to be supported by the corporation, the matter is important enough in the eyes of Mayor Cochrane to demand a searching enquiry at the hands of the City Council.

Phi Delta Theta at McGill University.—The Quebec Alpha Chapter, the first branch of this strong Greek Letter Society to be formed outside the United States, has recently been organized at the celebrated Canadian University. A member of the Fraternity who was formerly a student at Colby College, Maine, but is now a medical student at McGill, Mr. Charles A. Richardson, took a prominent part in the establishment of this chapter. As the Fraternity is extremely conservative on the subject of extension, McGill may consider itself honored.

The Right of a City to Send Smallpox Patients to a Hospital.—This important question is to be reported on by the legal department of Montreal shortly. Some months ago when smallpox was gaining a firm foothold in Montreal, two or three suffering from the disease refused to go to hospital, one even going so far as to threaten to split open the head of any doctor or health official who would come to remove him. The Hygienic Committee of Montreal have taken the subject in hand and have asked the city attorney to report on the right of the city to compel patients suffering from infectious diseases to go to the Civic Hospital.

Canada and the Rhodes' Scholarships.—A special cable to the "Montreal Star says: "The Rhodes' Scholarships are of a yearly value of three hundred pounds each, and are tenable at any College in the University of Oxford for three consecutive academical years. There are sixty colonial scholarships of which three go to Quebec, three to Ontario and three to Newfoundland. It is likely that the other Provinces of Canada will later on be placed on a similar footing to Quebec and Ontario.

Queen's University, Kingston.—The closing exercises of the Medical Department of this University were held on the afternoon of April 9th. A report of the work of the past winter session was submitted by Dr. Herald, the Secretary of the Medical Faculty, which showed that there had been in attendance in that department 177 students, the largest in the history of the college. Queen's is generally looked upon as a Presbyterian institution, but the medical students seem to be pretty well divided up in their religious opinions. There were fifty-nine Presbyterians; 53 Methodists; 30 Roman Catholics; 26 Anglicans, and the remainder of various denominations. During the coming summer it is the intention of the medical faculty to spend $6,000 in equipment.

Ontario Board of Health: Quarterly Meeting.—The regular quarterly meeting of the Ontario Board of Health was held last week in Toronto. Dr. Bryce, the Secretary, made an extensive report on the smallpox outbreak. During the past month it is pleasing to learn that the number of cases has diminished by over fifty per cent. Last year 1,879 cases occurred throughout the Province. During January of the present year 629 cases were reported. In February there were 707 cases, while in March it had dropped to 302. The total number reported to the Board of Health in the past fifteen months amounted to 3,517. The general health of the Province for the first three months of 1902 has been most satisfactory to the people. Dr. Bryce also made an extensive report on the mortality returns. In his opinion too often the death certificate was marked "heart failure." He considered that sometimes this return was fraudulent and at other times simply made as a cloak for ignorance. Upon the whole question of mortality statistics an exceedingly interesting discussion sprang up which extended itself so as to involve the duties and responsibilities of coroners. In Ontario there are over five hundred coroners. These are government appointments; and there are altogether too many of them. The law requires them to swear that there are no evidences of foul play before they actually make their investigation. In the opinion of the Board of Health this law should be amended: and it may be stated in the opinion of a good many Ontarioans the whole question of the appointments of these officers could be reviewed and revised with profit. For instance, in Toronto there are a score or two of coroners, when one might easily do all the work, providing he receive an adequate salary for his trouble.

Dr. Roddick's Bill for Dominion Registration.—Dr. Roddick's bill for the establishment of a Dominion Medical Council seems to be making friends for itself in the Dominion House of Commons. When it received its second reading, Sir Wilfrid Laurier, the Premier, looked at it rather askance, and doubted its constitutionality. However, since it has been reported on favorably by a special committee of the House, Sir Wilfrid, seems to have looked more closely into the merits of the Bill, and now states that he does not believe that it interferes with provincial autonomy. It is further understood that the Minister of Justice is preparing an elaborate report to present to the House at an early date; and it is thus likely that the small opposition which has emanated from some local Quebec Universities will be overcome, and they will become convinced of the propriety and advantages of the measure. As Dr. Roddick states, the bill is only permissive, as it does not take away any of the existing rights of the Provinces, nor does it yet compel any of the Provinces to take part in the formation of a Dominion Medical Council, if they deem it to their better advantage to remain as they are. Before the measure becomes absolute throughout Canada, each of the provincial legislatures must enact legislation ratifying it.

GENERAL.

Dr. Kinyoun's New Position.—Joseph J. Kinyoun, M.D., Ph.D., late Surgeon of the Marine Hospital Service and Director of the Hygienic Laboratory at Washington, has assumed the directorship of the biological laboratories of the H. K. Mulford Company at Glenolden, Pa. During Dr. Kinyoun's service with the Government he enjoyed special advantages in the study of bacteriology and allied subjects, having been sent to Berlin and Paris on several occasions, where he received special instruction under Professors Koch, Behring, Pasteur and Roux, in the Hygienic Institute, in the Institute for Infectious Diseases of Berlin and in the Institute of Pasteur of Paris. In addition thereto he has on numerous occasions been delegated by the government to international congresses and to visit the various bacteriological institutes of Europe and Japan for the purpose of acquainting himself with the progress made in serum organotherapy and the investigation of infectious diseases. Dr. Kinyoun is widely and favorably known at home and abroad as a sanitarian and investigator and is uniquely fitted for the task of conducting original research work.

Fourteenth International Medical Congress.—This will be held in Madrid, Spain, from April 23 to 30, 1903, Dr. Abraham Jacobi having been requested by the officers of the Congress to form the American Committee, has arranged that the plan devised by Dr. William Osler, which worked so well in preparation for the Thirteenth Congress, shall be followed also for the Fourteenth. Invitations to accept places on the Committee have therefore been sent to the president of the American Congress of Physicians and Surgeons, the president of the American Medical Association, the presidents of the fourteen constituent societies and associations of the American Congress, the Surgeons-General of the

Army, of the Navy, and of the Marine Hospital Service, the President of the Canadian Medical Association and the President of the National Dental Association. Acceptances have been received from nearly all of those invited. Dr. Howard A. Kelly of Johns Hopkins University will deliver the address at one of the general meetings of the Congress, and has chosen for his subject "The Passing of a Specialty." Dr. Ramon Guitéras has been appointed delegate to the Congress by the New York Academy of Medicine. The Committee to date consists of W. W. Keen, M.D., of Philadelphia, President of the American Congress of Physicians and Surgeons; John C. Wyeth, M.D., of New York, President of the American Medical Association; R. H. Chittenden, M.D., of New Haven, President of the American Physiological Society; Walter S. Christopher, M.D., of Chicago, President of the American Pediatric Society; Joseph Collins, M.D., of New York, President of the American Neurological Association; John W. Farlow, M.D., of Boston, President of the American Laryngological Association; Samuel A. Fisk, M.D., of Denver, President of the American Climatological Association; S. C. Gordon, M.D., of Portland, Me., President of the American Gynecological Society; George T. Jackson, M.D., of New York, President of the American Dermatological Association; Horace G. Miller, M.D., of Providence, President of the American Otological Society; Presley M. Rixey, M.D., of Washington, Surgeon-General of the Navy; F. J. Shepherd, M.D., of Montreal, President of the Canadian Medical Association; George M. Sternberg, M.D., of Washington, Surgeon-General of the Army; O. F. Wadsworth, M.D., of Boston, President of the American Ophthalmological Society; DeForest Willard, M.D., of Philadelphia, President of the American Surgical Association; H. August Wilson, M.D., of Philadelphia, President of the American Orthopedic Association; James C. Wilson, M.D., of Philadelphia, President of the Association of American Physicians; Walter Wyman, M.D., of Washington, Surgeon-General of the Marine Hospital Service; Abraham Jacobi, M.D., of New York, Chairman.

Illegal Practice.—A fine has been imposed by the Chamber of Correction, Paris, upon a druggist who diagnosed and treated a case from an examination of a specimen of urine.

Second International Conference for the Prophylaxis of Syphilis and Venereal Disease.—This will be held in Brussels September 1-6, 1902.

Physician to the Shah.—Dr. Elezarian Randolph, who formerly practised in New York, has been appointed personal physician to the Shah of Persia.

Leprosy in Hawaii.—Five years ago, there were 1,300 lepers in Molokai; at present there are but 900.

Loeffler's Theory Refuted.—What is at least a partial refutation of Loeffler's theory as to the incompatibility of cancer and malaria comes in the form of a letter from Dr. R. Plessi of Santa Vittoria di Gualtieri, to Prof. Maragliano, in which he states that malaria is prevalent to such an extent in this town of 2,500 inhabitants that there are at least 300 cases of the disease annually. Yet in five years, 11 cases of carcinoma were observed, 3 of whom were undoubtedly affected with malaria; and in one case, the cancer grew rapidly worse during the malarial attack.

Second International Congress for Electrotherapy and Radiography.—This will be held in Berne, Sept. 1-6, 1902.

Divorce and Suicide.—M. Morselli has collected statistics showing that of one million inhabitants of Prussia, there have been 348 cases of suicide among divorced or separated women, as against 51 among married women. The proportion is even greater among men; as for 268 suicides of married men, there were 2,834 in those who were divorced or separated.

American Congress of Tuberculosis.—This congress will hold its third annual meeting May 14, 15 and 16, 1902, at the Hotel Majestic, New York, in joint session with the Medico-Legal Society.

Prize Offered by Cuban League against Tuberculosis.—This prize is offered for the best thesis on the Prophylaxis of Tuberculosis in Cuba, under the following conditions: (1) The prize shall be $150 in American money. (2) The thesis shall not cover more than fifteen pages and must be sent in by October 1st. (3) The theses are to be sent to the President of the League against Tuberculosis, Monserrate, 2, Havana, and are to be signed with a motto; the author's name to be enclosed in a sealed envelope bearing the same motto. The prize is open to all who desire to compete, whether resident of Cuba or not. The theses may be written in any language. The prize will be awarded October 10th, 1902.

French Congress of Alienists.—The next meeting of the Congress of Alienists and Neurologists of France and of French-speaking countries will be held at Grenoble, August 1-8, 1902.

St. Louis Medical Society of Missouri.—The following program was presented Saturday evening, April 12th, 1902: "Cesarian Section—Report of a Case, with Presentation of Mother and Child." by Dr. C. M. Nicholson; "Acute Fatty Degeneration of the Kidney and Liver after Chloroform," by Dr. A. E. Taussig. The program for next week is as follows: "A Clinical Study of Amebic Dysentery, with a Report of Ten Cases," by Dr. H. L. Nietert; "Endemic Amebic Dysentery," by Dr. Jesse S. Meyer; "The Pathologic Findings in Amebic Dysentery," by Dr. Carl Fisch.

American Therapeutic Society.—The following is the program of the third annual meeting of the American Therapeutic Society, to be held at the New York Academy of Medicine, May 13th, 14th and 15th, 1902. Morning Session, First Day, Business Meeting: "Review of the Progress of Therapeutics of the Preceding Twelve Months. Presidential Address," by Reynold Webb Wilcox, New York. Afternoon Session, First Day: Symposium on Valvular Diseases of the Heart: (1) "Etiology and Symptomatology," by Thomas E. Satterthwaite, New York; (2) "Treatment," by George B. Fowler, New York; (3) "Prognosis," by Leonard Weber, New York; "The Capillary Area," by Eli H. Long, Buffalo, N. Y.; "The Proper Introduction of Therapeutic Agents to Science and Commerce," by F. E. Stewart, East Orange, N. J.; "Therapeutics of Chromium Sulphate (Green Chromic Sulphate)," by Louis Kolipinski, Washington, D. C. Morning Session, Second Day. Symposium on Treatment of Pulmonary Tuberculosis: (1) "Climatic," by Josiah N. Hall, Denver, Col.; George Edward Tyler, Denver, Col.; (2) "Medical," by Jesse Shoup, Washington, D. C.; (3) "Dietetic," by William Henry Porter, New York; D. Olin Leech, Washington, D. C.; (4) "Physical," J. W. Chappell, Washington, D. C., and Egbert LeFevre, New York. "A Contribution to the Therapeutics of Iron and Silver," by Albert C. Barnes, Philadelphia, Pa.; "The Causes, Prevention and Treatment of Puerperal Eclampsia," by Robert Reyburn, Washington, D. C. Afternoon Session, Second Day. Recent Advance in Special Therapeutics: "Ophthalmology," by D. B. St. John Roosa, New York; "Gynecology," by Matthew D. Mann, Buffalo, N. Y.; "Surgery," by William H. Carmalt, New Haven, Conn.; "Obstetrics," by Charles Jewett, Brooklyn, N. Y.; "Laryngology," by Charles H. Knight, New York; "Orthopedics," by Newton M. Shaffer, New York; "Genito-Urinary," by Eugene Fuller, New York; "Electro-Therapeutics," by William

J. Morton, New York; "Pediatrics," by Charles G. Kerley, New York; "Dermatology," by Charles W. Allen, New York; "Neurology," by Edward D. Fisher, New York. Morning Session, Third Day: "Changes Occurring in Chemical Substances in the Organism," by J. W. Wainwright, New York; "The Therapeutic Use of the Organic Extracts," by Oliver T. Osborne, New Haven, Conn.; "The Treatment of Gonorrheal Arthritis," by DeForest Willard, Philadelphia, Pa.; "The Treatment of Opium Addiction," by Smith Ely Jelliffe, New York; "Some Points on Roentgen Therapy," Carl Beck, New York.

Profs. James and Schurman Honored.—At the recent graduation ceremony at the University of Edinburgh, the honorary degree of doctor of laws was conferred on Prof. William James of Harvard and Prof. Jacob Gould Schurman, President of Cornell University. In bestowing the degrees the Dean of the university referred in the most cordial terms to Professor Schurman's reputation as a deep thinker, and spoke of his zeal and genius for organization, by which a School of Philosophy had been built up at Cornell, such as few universities possess. The Dean also spoke of the foremost place among psychologists won by Professor James.

Bubonic Plague in Rats.—The efforts of the Philippines Commission to reduce the number of rats in Manila are meeting with much success. In a report on the subject forwarded to the War Department by the commission, Major L. M. Maus, Surgeon, U. S. A., and Commissioner of Public Health in Manila, says that between September, 1901, and February 1, 1902, 33,772 rats have been caught by the official rat-catchers and natives. Of this number, 30,786 were examined for infection at the health board's laboratory. Two hundred and twenty-nine bubonic-plague rats were found, or seven-tenths of one per cent. of the number examined. In January, 16,776 rats were examined, and of these, fifty-one were found to be infected, three-tenths of one per cent. for the month, "from which it would appear," says Major Maus, "that the disease among rats is gradually disappearing. Should the plague entirely disappear from the rodents there would be a strong probability of the termination of the present epidemic." No plague cases were reported in January. The last case was reported December 24, 1901. Eighteen cases occurred in Manila in January, 1900, and four in January, 1901. In 1900 the disease was most prevalent in March, when 64 cases occurred, while in 1901 the climax was reached in May, with 124 cases. Every house in which infected rats were found was remodeled, cleaned and disinfected.

Re-election of Sir William Church.—Sir William Church has been reëlected to the position of President of the Royal College of Physicians in England. He now holds the office for the fourth year in succession.

Officers of the American Ophthalmologic and Oto-laryngologic Association.—President, Dr. Wm. L. Ballenger, Chicago; First Vice-President, Dr. J. O. Stillson, Indianapolis, Ind.; Second Vice-President, Dr. J. M. Ray, Louisville, Ky.; Third Vice-President, Dr. Edwin Pynchon, Chicago; Secretary, Dr. D. T. Vail, Cincinnati, Ohio; Treasurer, Dr. O. J. Stein, Chicago. Place of meeting, Indianapolis, Ind.

An Appropriate Memorial.—We have just received a very well gotten up memorial to Drs. J. T. Eskridge and Clayton Parkhill, both of Denver. The members of the Denver and Arapahoe Medical Society deserve much credit for the thought and taste displayed in this pleasing tribute to the memory of two of their members. The custom here followed is a good one and is deserving of wide imitation.

OUR BERLIN LETTER.

Berlin, April 7, 1902.

CONGRESS OF GERMAN SURGEONS—HONORARY MEMBERS—ASEPSIS IN MILITARY SURGERY—PISTOL-WOUND OF HEART—TREATMENT OF FRACTURES—PARAFFIN IN DEFORMITIES—CANCER — APPENDICITIS — GENITO-URINARY SURGERY.

The Thirty-first Congress of German Surgeons was held at Berlin, April 2-5, 1902. The president, Professor Kocher of Bern, opened the Congress with suitable remarks, welcoming the members and congratulating them on the tenth anniversary of their own home, the Langenbeck House.

Bergmann and Koenig of Berlin, Guyon of Paris, Durante of Rome, Keen of Philadelphia and MacEwen of Glasgow were proposed for honorary membership.

The first scientific subject for discussion was the first bandage on the battlefield and the prevention of sepsis thereby. Wounds should not be touched by the fingers and the most strict asepsis should be observed. Prof. Bruns proposed the closing of such wounds with an aseptic paste and adhesive plaster strips instead of with soft bandages.

Prof. Trendelenburg (Leipsic) presented a patient who received a pistol-shot wound of small caliber in the region of the heart; the wound healed spontaneously, but caused subsequently some heart trouble. By the use of the Roentgen rays the bullet was located in the right ventricle. It is now encapsulated and the heart's function is normal again.

At the afternoon session the treatment of fractures was discussed. Should fractures be treated by the still prevalent bloodless method, with splints or plaster bandages, or by operative procedure, viz., the uniting of the bone with silver sutures screwed together?

Noelker (Heidelberg) favors union by wire, if the fracture be not near a joint and if only one bone is to be united or if the fractured parts show such dislocation that by bandaging a poor result must be expected.

Dr. Arbuthnot Lane of London, who by reason of his extensive experience with sutured fractures had been especially invited to take part in the discussion, reported that he had treated 150 fractures united by wire sutures. He favored this method, but it could not be employed in all cases, as the healing process was very slow, and in cases in which by reason of the occupation the patient had to use the limb soon the bandage treatment was preferable.

Schlange, Körte and Heule warned against the abandonment of the old and tried bandage method and Kocher pleaded for individualization of the cases. He is rather inclined to favor wire sutures in joint fractures, so as to obtain a perfectly straight limb.

With a few remarks by Koenig (Berlin) on how to prepare amputation stumps in order to give the patient a chance for proper support and some by Sultan (Koenigsberg) on how successfully to heal dead bone, the afternoon session of the first day closed.

At the evening session demonstrations were made with the projection apparatus, showing the difference of the patella in man and in animals and also the changes which the strangulation produces in the feet of Chinese women, a method customary in that country.

Dr. Stein (Berlin) showed pictures of subcutaneous injections of paraffin for the purpose of correcting the saddle-nose (*nez de mouton*) deformity. Finally Doyen (Paris) gave a kinematographic representation of the operation performed on the Hindu xiphopages, Radica and Doodica, one of whom has recently succumbed to tuberculosis.

The session of the following day, April 3d, was probably the most interesting, the subject being the different aspects of cancer. The first point at issue was: How is the recidive of a malignant neoplasm to be explained after radical removal of the original growth? Different reasons are mentioned. A part of the tumor might have remained or particles of the neoplasm might have been carried to distant parts by the blood or lymph current. Even the possibility of the surgeon carrying particles of the tumor to a new place on his instruments might be considered. However, it must always be borne in mind that an inclination is prevalent for a new tumor to grow up in the immediate neighborhood of the old growth and this second growth might be entirely independent of the original tumor.

The next discussion was devoted to the etiology of cancer with special reference to parasites as etiological factors. Gussenbauer of Vienna, tends in his opinion toward the parasitic theory, but he does not feel in a position to go further into the matter at present. Some others rather peculiarly do not consider the etiology of cancer as the most important momentum, but consider it best thoroughly to examine first into the process how normal tissue elements are propagated. Petersen and Kahlden are among the latter.

Demonstrations of microscopical sections were given and cultures of his parasites were shown by Schüller (Berlin) and Feinberg, the assistant of Leyden, showed some colored slides, purporting to be cancer-producing micro-organisms. Schüller's demonstrations created considerable interest, while Feinberg's claims were rather skeptically received. O. Israel, Virchow's first assistant, fought somewhat shy of the question.

In carcinoma of the stomach and intestines Kroenlein of Zürich pleads for early and radical operation. As soon as the disease is recognized, the operation ought to be performed. This would insure much better results. At the end of the session a case was reported in which the radial distal end had been resected and a phalanx of the big toe had been successfully employed to supply the missing radial section.

The next session dealt with abdominal surgery, especially the operation for appendicitis. Sonnenburg (Berlin), who has performed a large number of operations, found many of these cases accompanied by a pneumonia, which he believes is caused by embolism. The patient is afraid to move about, weakness of the heart results and subsequently the embolism and pneumonia develop. An interesting report was made by Bertelsman of Hamburg, of 100 microbic blood-examinations in order to show the different kinds of microbes and their number during different stages of acute infectious diseases. He does not believe that the presence of microbes even in large numbers indicates any conclusion as to the prognosis of the case, but that their presence is often the means of recognizing the disease.

The sixth sesion of the Congress was occupied with genito-urinary surgery. The most important question ventilated was: If it be deemed necessary to remove one kidney, how is one to know whether the remaining kidney is capable of supplying the work of both kidneys? In other words, is the remaining kidney sound? To decide this question, the freezing-point of the urine must be determined, the normal urine freezing at 0.56° C. Dr. Loewenhardt recommends an electrical apparatus for the same purpose.

On Saturday, the closing day of the Congress, a collection of cases, representing all branches of surgery was reported. Of special interest was a report of Saenger (Hamburg) of a number of cases of inoperable brain tumors, which had caused headaches, loss of vision and other results of intracranial pressure. To alleviate these symptoms an opening into the skull near the seat of the tumor had been made and the result was very satisfactory.

Casuistic remarks by some of the members closed the scientific work of the Congress. During four days 118 different subjects were presented and discussed.

The men proposed for honorary membership were then elected and also the new president, Prof. Kuester of Marburg, who is known through his work on kidney surgery, which appeared in the *Deutsche Chirurgie*. He is an able man and a congenial one and the Congress is to be congratulated upon its choice.

TRANSACTIONS OF FOREIGN SOCIETIES.

German.

POST-TYPHOID NERVOUS LESIONS—LUMBAR PUNCTURE AND MENINGITIS—DISINFECTION OF THE HANDS WITH ALCOHOL—ABSCESS OF THE BRAIN—ACUTE TROPHONEUROTIC BONE ATROPHY—ABORTION AND ENDOMETRITIS—CHRONIC ATROHPIC GASTRITIS—STONE IN THE BLADDER.

The topics which occupied the attention of the German societies at sessions of recent date were of important clinical significance and practical weight. Selection of the following subjects has been made as representing those most directly applicable to every-day practice.

Lenhartz, at the Aerztlicher Verein in Hamburg, January 21, 1902, presented a fourteen-year-old-boy, in whom, secondary to a remarkably severe attack of typhoid fever, extensive and acute incoordination appeared affecting all four extremities and the trunk, although neither sensibility, muscular sense nor general strength showed much depreciation. On examination the boy presented the following symptoms: Exaggerated patellar reflexes; ability to stand with wide-spread legs without support, but powerless to take a single step without marked swaying of the whole body and the danger of falling; ability to go considerable distance with support, showing distinct toeing-in and great swaying of the body, constituting together a well-defined ataxia; no disturbance of the bladder or rectum; a very slight decrease in the ordinary functions of intelligence, for example, slow mental arithmetic, when according to rule, but failing when not according to rule; occasionally periods of surprising shrewdness and smart exclamations; various disturbances of speech, chiefly hesitancy, deliberation, monotony and peculiar scanning; failure in writing ability, especially the placing of several letters upon each other, and the irregularities of the shading strokes. As to the question whether in this patient there was severe functional or special anatomical sequelæ of his typhoid, the answer lies in the history of his attack. The youth owed his life to the diligent nursing and the careful treatment which he had. For many weeks physicians watched day and night over him, as he lay from August 7th to the end of October with uninterupted coma which was certainly not any cataleptic state. Through this period and until November 9th, he had to be fed with the stomach-tube. When he came out of the coma by degrees, he was at first totally blind and deaf and feeling was the only sense that connected him with the outer world. Examination of the eye and ear showed them to be practically normal. Hearing returned first. As he began to see again early in November he recognized pictures, letters, words and understood them, but had no comprehension of spoken language. Only through December and January has the ability to utter language returned. The attack of typhoid fever was itself intense. In addition to the unusual, long, deep coma, he had two copious hemorrhages from the bowel during the primary attack and one relapse; double-sided pneumonia in each lower lobe, a very high grade weakness of the heart, bed-sores on the back, buttocks, trochanters, and feet, complicated the picture. Normal salt solution infusions, free dosage with bismuth during the hemorrhages, the administration of serum, very careful feeding, and stimulation are responsible for the cure. It is probable that the severe cerebral symptoms are referable to very small numerous changes in the brain called forth by the toxicity of the original disease. Whether with the present means of diagnosis it is possible to call these changes anatomical is very doubtful. In 1872 Ebstein described a memorable case in which seven years after a similar intense typhoid attack multiple small pus foci were found in the brain which were analogous to the lesions of multiple sclerosis. It is possible that in this case of Lenhartz a very severe exhaustion of the central nervous system had taken place as a result of the uncommonly intense, acute, infectious disease through which the patient passed, himself the offspring of a family of poor nervous development. The prognosis is probably favorable, with a slowly developing improvement. Methodical practice in speaking and in the use of the limbs with suitable protection against accident will be the best means of treatment. The author feels confident of this outlook because nineteen years ago, while he was assistant in the clinic at Leipsic, he observed and described a case almost photographically the same as this one. The patient ten years later had almost entirely recovered from all his symptoms. In this latter case acute ataxia and aphasia appeared after severe dysentery.

G. KRÖNIG, at the Berliner medicinische Gesellschaft, February 5, 1902, showed a young man who a few weeks before had been treated and cured by him of spinal meningitis, with distinct symptoms. Lumbar puncture under a pressure of 500 millimeters had drawn off purulent fluid which contained Weichselbaum-Jaeger meningococcus. Surprising improvement followed this procedure, which was repeated two days later, bringing away a few drops of very thick pus. For the thinning of this he then injected about 1 cubic centimeter of sterile normal salt solution, which was followed by a stream of pus. The instillation was repeated until in all total 6 cubic centimeters were given. Improvement continued. Two days later the puncture was repeated and a clearer, thinner fluid was withdrawn. Four days after this the spinal fluid appeared to be macroscopically and microscopically normal. Krönig emphasized three points brought up by the course of this case: (1) Was the puncture with instillation necessary? He answered that the resorption of the thick pus without the thinning brought about by the instillation would hardly have been possible and that probably it would have developed into scar tissue or again into a chronic meningitis. (2) The instillations were without danger. (3) They are of service in the purely spinal form, but probably not in the cerebral form of epidemic meningitis.

The opinions offered in the discussion of this practical and important subject were the following: P. Jakob compared this procedure with his own and that of Leiden, for the administration of drugs through lumbar puncture. He considers, however, that it is serviceable not only in spinal but also in cerebral forms of the disease because, according to his experiments, salt solution can very well reach the brain. He has injected as much as 20 cubic centimeters of the fluid and even a very weak solution of carbolic acid. In two or three cases of purulent meningitis good results were obtained. The pus must not only be thinned, but the whole cavity of the arachnoid must be washed out. No danger is caused by it. He considers the necessity of such instillation absolute. A. Fraenkel denied the possibility of a lateral washing out in the face of the anatomical conditions. The pus must be hidden in many small pockets and folds. The value of lumbar puncture lies in the relief of pressure upon the nervous system, and is available in the serous form also according to Quincke. Epidemic meningitis with pus is not easily cured without such a procedure. He has recently employed it with success four times in the hospital in Urban but did not either instil or wash out. In one of these cured cases the symptoms of trouble in the brain were extraordinarily severe and the pressure reached 1,000 millimeters. Senator thought that in the case of Krönig a thinning of the pus was not brought about so much as a washing-out of the end of the syringe tube.

SCHAEFFER, at the Medizinische Gesellschaft in Berlin, February 5, 1902, reported another series of observations as to the use of alcohol in disinfecting the hands, with a conclusion that hot water and alcohol still give the best results. His method is simply a thorough scrubbing of the hands for five minutes with hot water and soft soap, followed by immersion in alcohol of great concentration for three to five minutes.

VON KRYGER, at the Aerztlicher Bezirksverein zu Erlangen, January 28, 1902, demonstrated a specimen of brain abscess in the right frontal lobe. After a gunshot wound in June, 1901, considerable pus developed which appeared to be cured by a trepanation of the frontal bone in August without finding or removing the projectile. Early in January, 1902, a very great relapse in the symptoms occurred, with severe pain in the head, dizziness, and finally a sudden onset of unconsciousness followed rapidly by death. The autopsy showed an abscess the size of a pigeon egg, with thick walls in which was embedded the bullet. This abscess had broken suddenly into the ventricle of the brain. In addition, there was on the base of the brain over the region of the pons a very thick purulent exudate. He also presented a case of abscess of the brain following a purulent otitis media. The young man had suffered for years from a purulent discharge from the right ear and was suddenly attacked with high fever, pain in the back of the head, increased by movement but not by percussion. On the third day motor paralysis of the left lower extremity and paresis of the left arm, with escape of the sensorium occurred. At the operation the petrous bone was exposed after the manner of Bergmann with the evacuation of a teaspoonful of thick, foul-smelling pus from between the dura and the bone; exposure of the bare bone and a perforation of the tegmen tympani; discovery of pus in the other bony recesses of the organ of hearing and in the mastoid process. Puncture of the brain gave no evidence of accumulation of pus elsewhere. After temporary improvement death occurred on the third day after the operation. The features of the autopsy were a copious purulent exudate over the convexity of the brain; on the right side within the right temporal lobe, an abscess-cavity the size of a chestnut with thick walls connecting with the dura and with the hole in the tegmen tympani through a passage about the size of a pea, showing an unmistakable connection between the pus in the ear and that at this situation in the brain, and proving the great difficulty of the diagnosis and the failure of Bergmann's operation to reach this special focus.

SUDECK, at the Aerztlicher Verein in Hamburg, February 4, 1902, read a paper on the acute trophoneurotic bone atrophies secondary to inflammations and injuries of the extremities and their clinical significance. He exhibited a number of X-ray photographs proving that after inflammations, first of all of the joints, then of the soft parts, and also after injuries such as fractures, distortions and contusions of the joints, distinct high-grade atrophy of the bone may occur not only in the bones directly interested in the joints, but sometimes in those at more distant points of the same extremity. These atrophies of bone are distinguished by their peculiar form, irregular fatty degeneration of the bone, especially in the spongy substance, and also through a rapidity of their appearance and the intensity of their degree. Sudeck places this disease of bone in the same category as similar acute degeneration of muscle, and other trophic disturbances (cyanosis, edema of the skin, hypertrichosis, etc.), following injuries of joints. He thinks that all these developments are due to a reflex trophoneurosis and attaches great clinical importance to them. In the hands one observes as the result of this bone atrophy, stiffness of the fingers and tenderness, and in the feet small fixations and great tenderness even at the slightest touch. Bone atrophy, like muscle atrophy, may be very obstinate and extend over many years. These conditions are, according to the author's observation, usually not recognized and are usually ascribed to exaggeration or pretence or to tuberculosis of the bone, or in the case of the feet to inflammatory flatfoot. He thinks that under this same heading belong the conditions which have been described as joint neurosis. The treatment consists in orthopedic management, massage, hot baths, and the circulatory treatment of Helferich. The feet should not be immobilized, but should be relieved from bearing weight. The condition described occurs not only after great injury, but often also after slight injury, as, for example, sprains of the hand or the foot. Atrophy of bone is observable rather frequently, but after all, only exceptionally after these injuries. When it is present, however, it possesses the character of a distinct clinical picture and shows as a rule obstinate symptoms which may appear to have no relation with the injury itself.

Flatan, at the Nurnberger medizinische Gesellschaft und Poliklinik, January 2, 1902, gave some practical points on the treatment of abortion and its consequent endometritis. Large retained fragments of the placenta or moles he always removes with his fingers, because the curette or the sharp spoon usually slides over firmly adherent masses without removing them, especially if the physician, as experience goes, begins the operation without sufficient dilatation of the os and therefore with too small instruments. Rather small, retained fragments of placenta he thinks are best and most surely removed with Winter's abortion forceps, the right use of which shuts out the possibility of perforating the uterus. Shreds of the decidua, large or small, sticking fast most frequently in the necks of the tubes, are best taken away with the sharp large curette, after the neck of the womb has been widely dilated. Small curettes and pointed forceps are instruments, which in his opinion, are almost useless and should therefore be discarded. The catarrhal endometritis and its most obstinate symptom, leucorrhea, the author has treated with greatest success for many years with formalin. Necessary to the successful managment of it is a good self-retaining speculum. None is better than Neugebauer's or the Trelat-Cusco, if the blades be 1½ to 2 centimeters shorter than most of them sold. Strong, firm-biting volsellum forceps are also desirable. For carrying the medicament he uses Menge's hard rubber sound because it is so easily rendered sterile. He uses a 25-50-per-cent. solution of formalin and repeats the treatment every six days. The results are surprisingly flattering.

J. Mueller, at the Physikalisch-medicinische Gesellschaft zu Wurzburg, January 9, 1902, presented and described a case of chronic sclerosing gastritis. The patient was thirty-nine years old, master baker, previously always well, until 1882, when he became infected with gonorrhea and syphilis and was treated with inunctions and potassium iodide. In 1886, in Aale, ulcers of the tongue appeared which were treated successfully with antisyphilitic measures. In 1895, at Jena, he was under care for double vision and the inunctions were resumed, but not for long because the eye symptoms soon disappeared. He then remained in good health, especially without indigestion. In the spring of 1899 his first symptoms of gastric trouble appeared with the following features: Under entirely normal appetite he could eat less than previously, was able to take only a very little at a time, because the stomach after large amounts showed signs of pressure and soon relieved itself by vomiting. Finally, on account of his enormous appetite he was compelled to be nibbling all day long, in spite of which he lost much weight and strength and had to give up his vocation. Examination showed on the first occasion, in the summer of 1900, the following features: Spasm of the esophagus in the region of the cardia whenever the sound was passed, so that the suggestion was made of a spasm of the esophagus as the foundation of the disease. Later, however, this condition disappeared and the cause of the symptoms was proved to be a distinct decrease in the size of the stomach which contained only from ¼ to ½ a liter of water. If more were put in, a feeling of heavy pressure immediately appeared and was soon followed by projectile vomiting. A similar occurrence was seen when the stomach was blown up with air, excepting that under air a tumor appeared in the left side below the ribs. Gastrodiaphany and X-ray illumination proved that the end of the tube was really in the stomach. The secretory function of the mucous membrane of the stomach was almost entirely gone. The differential diagnosis lay between an hour-glass stomach or a carcinoma. The latter was ruled out from the fact that during the past eighteen months the man had undergone considerable improvement. The writer's opinion was that the man suffered from a chronic sclerosing gastritis with atrophy of the mucous membrane and shrinking of the volume of the stomach. such as were recently described by Hemmeter and Stokes. The cause of these cases can be ascribed to syphilis. The treatment the man was undergoing was renewed inunctions, a dosage of iodide of potassium with methodical gradual dilatation of the stomach by means of water. Under this management a distinct improvement had been attained, so that at the present time the patient can cautiously take almost his former amount of food. A detailed report of this case will be given later.

Riff, on January 25th, at the Unterel-saessischer Aerzteverein, presented a specimen removed at autopsy from an eighty-two-year-old man, consisting of the bladder with a large diverticulum which was filled with stones. For ten years the man had showed symptoms of bladder disease, for two years ammoniacal changes in the urine, for six weeks blood and pus in the urine, a capacity of the bladder two years ago of 100 cubic centimeters, but of only 50 cubic centimeters for the past six weeks. The specimen presented, in addition to the slight hypertrophy of the middle lobe of the prostate, a diffuse diphtheritic inflammation of the bladder and over the right ureter a large diverticulum which contained eight or nine rather heavy stones. On account of the small capacity of the bladder, cystoscopy was impossible. For this reason the diagnosis was made only at autopsy.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held April 3, 1902.

The President, Robert F. Weir, M.D., in the Chair.

The first business of the evening was the consideration of the resolution presented by Dr. Joseph D. Bryant at the last meeting in March with regard to the Lunacy

Bill which places Ward's Island Asylum under the charge of a single superintendent. These resolutions ask the Governor of the State of New York to appoint at least two superintendents, since the number of patients in these institutions seems to demand this as a precaution. On motion the resolutions were unanimously adopted.

The scientific business of the evening consisted of a Symposium on the Treatment of Fractures of the Lower End of the Radius.

Varieties of Colles' Fracture.—Dr. Carl Beck read a paper on the modern treatment of fractures of the lower end of the radius, as it is dictated by the relations shown in the fractured parts by the Roentgen rays. Dr. Beck said that the most interesting conclusion as well as the most important practical lesson, that can be drawn from careful study of radiographs of fractures of the lower end of the radius is that routine treatment can not and must not be the rule. Each fracture must be treated according to its individual indication. Colles' fracture—that is, a break in the radius about two inches above the distal end of the bone—does not present any uniform type, but differs in almost every case. It is often said that the characteristic symptom of Colles' fracture is the silver-fork deformity. There are not a few cases, however, that must be classed among Colles' fractures in which this deformity does not occur. Volkmann in Germany and Roberts in this country have shown how different the conditions presented by some of these fractures may be. There is need of a new classification and of a consistently individual method of treatment.

Reduction and Immobilization.—Reduction and immobilization remain the most important parts of the treatment of Colles' fracture. There has been for some time a tendency to give too much weight to a false maxim in the treatment of these cases. The soft tissues and the injury to them are erroneously said to be the important elements. As a matter of fact, however, the wounds of the soft tissues heal very rapidly and give very little trouble if the broken bones be properly reduced. When there is no reduction the abnormal pressure causes the soft parts to remain in a state of constant irritation that proves extremely annoying to the patient and delays tissue repair.

Careful Reduction.—Like a break in the continuity of tissue a fracture of bone can be expected to heal only when the parts are properly coaptated. No surgeon would look for primary union in a wound of the soft tissues if the edges were not well brought together. The most important practical use of the X-rays is the opportunity they provide for viewing the bones underneath the dressings after they have been applied. This enables the surgeon actually to see whether reduction has been accomplished and whether the dressings are of a kind to maintain this reduction and the immobilization of the fragments that will encourage healing of the fractures. The degree and the form of the deformity that exists after a fracture of the lower end of the radius is the important factor in the prognosis of the case. Reduction is usually easy, but sometimes it can be accomplished only with very great difficulty. The Roentgen radiograph constitutes the best possible evidence of the condition of affairs in the fractured bones and so enables the surgeon to show at any time what the probable prognosis of the case is and consequently to defend himself against any charge of malpractice.

Treatment of Complicated Fractures.—If there be a fracture of the radius into the joint at the wrist, the arm should be done up in a posterior splint, the hand placed in a sling with the weight resting on the ulnar border and the patient should be encouraged after two or three days to make movements of the fingers upon his chest, as if he were playing the piano. After a time freer movements of the fingers should be prescribed and the patient should carry marbles and play with them in his fingers. The displacement of the lower fragment is usually on the dorsum, but there may also be lateral displacement. At times this lateral displacement is toward the ulna, though more commonly it is outward. When these lateral displacements have occurred, it may be necessary to have an assistant make proper counterpressure while extension is being made in order to secure proper reduction. Extension can usually be accomplished best by firmly grasping the patient's hand, as if for a hearty handshake and then using the requisite amount of force.

Splints and Pads.—When the fractures of the lower end of the radius are complicated, splints made of plaster of Paris are the best, and even impacted fractures or the dreaded "Y" fracture may prove perfectly amenable to treatment. In "Y" fractures the inner fragment, which usually has a tendency to be displaced toward the ulna, may be pressed back to the radius by putting a large drainage-tube underneath the splints and gradually sinking it into the interosseous space. Fractures into the joint are always difficult of cure and no guarantee of a good result must ever be given. In these cases particularly radiographs are almost necessary to protect the surgeon himself from foolish or ill-meaning individuals, or from the machinations of lawyers.

Development of Diagnostic Acumen.—The X-rays may well serve of the highest usefulness in teaching the surgeon the minutiæ of the clinical diagnosis of these fractures. After careful palpation a sketch should be made that represents the surgeon's idea of the condition of the bone at the point of fracture. This sketch should be compared with the radiograph after it has been taken and the differences noted with the reasons for the failure to recognize any peculiarities that may be present.

After-Treatment.—It is the custom to recommend massage early in cases of fractures of the radius. There are certain cases in which spiculæ of bone are present in which massage almost surely leads to severe pain. In such cases it must not be employed. When the union of the bones is faulty, simple refracture may be accomplished rather easily from two to three weeks after the original dressing. After five weeks, however, an osteotomy must be performed and it may be necessary to remove a wedge-shaped piece of bone by excision.

Common Error in Treatment of Radial Fractures.—Dr. J. B. Roberts of Philadelphia, read a paper in which he stated that in his opinion the most common error in treating these fractures of the lower end of the radius is the failure to secure complete reduction of the fragments. Dr. Roberts has seen many unreduced fractures and it seems probable that many professors of surgery do not teach and many physicians do not practise the proper method for the reduction of these fractures. In some forms of fracture mere molding of the fragments is sufficient to bring them back to their place. In some cases, even of Colles' fracture, not very much force is needed, if it be used with proper knowledge. In many cases, however, all the muscular force that the surgeon can exert must be employed to secure reduction of the fragments. Fractures of the radius, no matter what their complications, have all to be treated the same way. If the fracture be impacted, correction of the deformity must be secured. If there be coincident fracture of the ulna, this adds very little to the necessity for precautions to be taken, provided the deformity be overcome. The age of the patient even makes very little difference. As a rule, however, the surgeon needs to set nearly all the force of his two hands at work in order to secure proper replacement. As much force must be exerted as is necessary to break the tibia and fibula of a child for the correction of bow legs.

Means to be Employed.—The fractures of the lower end of the radius produce a deformity that is typical, and the original state of the bone—the concavity of the anterior surface with the flatness of the dorsal surface—must be restored if a good result is to be obtained. It may be necessary to use both hands and the knee in order to secure a reposition of the fragments. Needless to say, in many cases anesthesia will have to be employed or the patient will not permit the exertion of the force necessary to secure correction. Moreover, physicians are often too timid and too easily discouraged by the complaints of their patients if an anesthetic be not employed. The setting of the fracture may be undertaken without an anesthetic if the doctor be conscious that he is able to exert all his force at once without hesitancy and if the patient be of the kind who will stand severe but brief pain, which will be over before he realizes its intensity. Quickness and assurance alone can make up for the deliberation that can be employed when the patient is narcotized. Compassion and timidity in these cases is always mistaken kindness.

Use of an Anesthetic.—As a rule, a general anesthetic must be employed if the fracture be somewhat old, say two and a half to three weeks, or if the patient be very sensitive. There are many physicians, however, who have not the heart to inflict the pain necessary for the reposition of the fragments without an anesthetic. In certain cases, even in reasonably insensitive patients the difficulty of reducing the fragments will be so great that an anesthetic will be necessary. Probably the more generally an anesthetic is employed, the less do bad results occur unless the surgeon be very confident of his own manipulation.

After-Treatment.—Very little after-treatment is required in most cases if the reduction of the deformity be complete originally. It is quite sufficient, as a rule, for the patient to carry the hand in a sling, but most patients are reckless, some of them are careless, and not infrequently these fractures occur in young persons who can not be depended on to give the injured member rest. The use of a splint, therefore, is generally required. A posterior splint coming down as far as the end of the metarcarpal bones is usually the most useful. A firm wristlet of adhesive plaster made thick by employing a number of layers will often be a sufficient protection for simpler cases if there be no marked tendency to recurrence of the deformity.

Secret of Success.—The secret of success in treating fractures of the lower end of the radius is to restore effectively the shape of the bone, no matter what the complaints of the patient may be. If this be always done, the bad results so often seen will not occur. Surgeons who make it a rule not to compound between their feelings and their surgical sense in this matter and insist on thorough correction do not fear, but welcome these patients.

Simple After-Treatment.—Dr. Robert F. Wheeler. opening the discussion, said that fractures of the lower end of the radius are of constant interest, because of their frequency. He had been especially interested in finding that so much insistence was placed upon proper correction of the deformity. His own first memory in a medical way of fractures of the lower end of the radius was the case of his professor in surgery, Dr. Willard Parker. Dr. Parker suffered a fracture of the lower end of the radius, and after about forty-eight hours resumed his teaching with his arm done up in a sling and protected only by the simple sticking plaster that was then in use. This incident made a lasting impression upon the students and showed them the necessity not for apparatus, but for primary correction of the deformity.

Vanderbilt Clinic Experience.—Dr. Edward M. Foote said that at the Vanderbilt Clinic there were ten surgical assistants, each of whom assumed the responsibility for cases under his own care. There seemed to be a certain agreement, however, with regard to fundamental points in the treatment of fractures of the lower end of the radius. With regard to an anesthetic, most of them are of the opinion that this is unnecessary, except in very difficult cases or in extremely sensitive patients. One or two of them, however, are of the opinion that the use of an anesthetic always allows so much better correction that it seems advisable to employ it. Dr. Foote himself is of the opinion that an anesthetic should be employed in every case of Colles' fracture. There is really no waste of time, the patient is saved what is unnecessary pain, the surgeon is able to secure absolute correction of the deformity and to assure himself of this correction and of any complications that may exist. Nitrous oxide is sufficient as an anesthetic for these cases and its employment will do more than anything else to prevent incomplete reposition and the pain that patients so often have to bear for several days as a result of failure of proper correction.

The X-rays in Colles' Fractures.—Dr. Foote does not think that the X-rays should necessarily be employed in every case of fracture of the lower end of the radius. To be of service at least four radiographs should be taken, and, as this would cost from twenty-five to forty dollars, it does not seem that patients should be asked to pay so much when the clinical symptoms are so plain as to make the diagnosis clear without this means. The radiographs must be taken in two planes, so that no distortion may be missed. This overcomes one objection to the use of the X-rays—their supposed liability to error. Another objection has been made, namely, they will set too high a standard in the treatment of these cases. Dr. Foote is of the opinion, however, that this will only lead to more open operations for the treatment of complicated fractures at the wrist and this will prove a real surgical gain in the end.

Splints Advised.—The surgeons in the service at the Vanderbilt Clinic are not agreed as to the splints that should be employed. In most cases there is no tendency to deformity after correction is once assured. In these cases no splint or at most a very small posterior splint need be employed. Whenever the deformity has a tendency to recur a molded plaster-of-Paris splint should be employed and put on under anesthesia. The use of the X-rays will undoubtedly tend to improve clinical diagnosis rather than lead to its neglect if comparisons be made between the results of the clinical diagnosis and the X-ray picture. The use of the X-rays gives an assurance of the proper position of the fragments if the picture be taken when the splints are fully applied.

Hudson Street Hospital.—Dr. F. L. Taylor said that at the Hudson Street Hospital an anterior and posterior molded plaster splint is invariably used. Great care is taken to reduce completely the deformity. For this purpose manipulations rather than force are employed. Impaction or embedding of the fragments in the soft tissues hinders flexion and manipulation often enabled surgeons to correct the deformity when mere force would not. A thick layer of vaselin is always applied before the plastered splints are applied to the hand. This form of dressing allows the arm to be passed through a coat-sleeve—a not unimportant consideration in such cases. In this way people may go about their business and are rather encouraged to wear the splint for the proper length of time. The use of these splints enables the surgeon to employ massage whenever this is deemed necessary. They should be worn for at least two weeks and usually for from three to five weeks. When necessary to secure correction of the deformity, pads are employed beneath the splint.

New York Hospital.—Dr. B. T. Tilton said that not enough stress has been put upon the frequent necessity of the employment of an anesthetic in order to secure proper reduction of the deformity in most fractures at the lower end of the radius. When these fractures are quite recent, that is to say, when not more than an hour or two has elapsed since their occurrence and when the soft parts have not been much injured, the setting of the fracture without an anesthetic is often quite easy. As a rule, however, when these fractures come to the hospital they are many hours old and sometimes from forty-eight hours to a week has elapsed since their occurrence. It is impossible at this time to secure reposition of the fragment without an anesthetic. Dr. Tilton employs an anesthetic more and more for all fractures of the lower end of the radius and is quite encouraged in the practice. The displacement of the fragments always increases with the lapse of time and an anesthetic is absolutely needed in order to relax the spasmodic conditions in the soft parts after the fracture is a day old.

Splints.—Wooden splints are employed, an anterior and a posterior. These are padded in three places. One of these pads is placed over the dorsum in order to keep the lower fragment in place. A second is put on the anterior splint for counterpressure over the upper fragment. The third pad is placed on the ulnar side, to crowd the ulna toward the radius and prevent the bony diastasis which often results in these cases and forms an unsightly result. When there is much displacement a moulded splint that can be easily removed and allows of massage and passive movements early in the case is employed.

Necessity for After-Treatment.—After-treatment is essential in all cases of fracture of the lower end of the radius and the complaint of bad results is due more to neglect of the after-treatment than to any fault in the primary treatment. The functions of the tendons and the joints must be obtained. There may be good union and bad function, or bad union with good function. A somewhat unsightly looking wrist, that permits, however, of the proper use of the fingers and the hand, is much better than a shapely joint with loss of function. Very early in the case the patient must be directed to use the fingers and make various movements. After two weeks the patients should be advised to use the wrist and the splints should be shortened so as to permit some motion in this joint. If the fingers be kept straight they will be stiff. This is not so apt to occur if they be kept in a bent position. It is important to remember that in all cases of fracture, the soft parts are also injured and they must be carefully treated. In patients who are over forty a bad result will almost surely occur, if the greatest care be not taken to secure functional movement.

Roosevelt Hospital.—Dr. W. C. Clark said that at the Roosevelt Hospital an anesthetic is employed if the fracture be impacted or present special difficulties. As a rule, however, reduction is done without gas. Moulded plaster splints are employed as they present less points at which pressure may be exerted and so are much more comfortable. The splints should come at first only as far as the middle of the fingers. After about ten days it should not come beyond the base of the fingers and then should be gradually shortened so as to encourage movements. If the patient be over thirty, hyperextension of the wrist must be secured with flexion of the fingers so as to relax the extensor tendons. After three weeks of treatment passive movements should be encouraged in the wrist joint itself, especially as regards the exercise of rotation and supination. If the diagnosis be unsatisfactory, or if the case be very complex the X-rays are employed. It would be too time-taking, however, to employ them in practically all cases.

Results at Roosevelt Hospital.—Dr. J. P. Fiske said that out of 1,029 fractures treated in five years at Roosevelt Hospital, there were 172 fractures of the radius, 142 of these being of the variety known as Colles' fracture; 14 per cent., therefore, of all the fractures treated—that is, something more than 1 in 7—were of this type. The more general use of the X-rays has not changed the treatment of this class of fractures, though undoubtedly in recent years better results have been obtained than formerly. This is due to the fact that surgeons recognize more generally the necessity for care in these cases and massage and passive movements are employed more generally. Whenever there is doubt the X-rays are employed. If the reposition of the fragments cannot be accomplished easily an anesthetic is employed. In patients over forty years of age the hot-air box is used toward the end of the treatment in order to favor that relaxation of the tissues which secures recovery of function. Dry heat at 350° F. is absolutely the best agent for this. This has been shown by long experience at Roosevelt Hospital. The forcible wrenching that is sometimes employed in order to overcome the stiffness of joints and muscles, really only aggravates the condition. Each case must be treated according to the individual indications and especial care must be taken to adapt the treatment to whatever injuries of the soft parts may exist. The dressing should never be applied at first to be left on for any length of time, but should be reapplied as the edema subsides.

Shortening of Radius.—Dr. George R. Fowler of Brooklyn said that the diagnosis of obscure conditions about the wrist-joint after severe injury has been greatly aided by the X-rays. The differentiation of contusion, sprain and fracture, is often an extremely difficult question. One of the important clinical signs on which sufficient stress has not been laid is the shortening of the radius that is readily found to exist if careful measurement of both arms be made. In impacted fracture, in which the X-rays may prove of little service, the shortening of the radius and the comparative lengthening of the ulna are pathognomonic signs. Sometimes these fractures heal very satisfactorily and yet function is very imperfect. Dr. Fowler saw a case recently in which the comparatively lengthened ulna acted as a lock to the wrist-joint. The lowest part of the ulna was removed by open operation and then function was much better.

Old Methods of Treatment.—Dr. Stephen Smith said that Colles, who originally described the particular fracture of the lower end of the radius that occurs most frequently, had seen very many of these fractures and claimed to have obtained excellent results with perfect use of the joint and the hand afterward. The main feature of Dr. Colles' treatment was the employment of a transverse pad across the dorsal prominence with a tin splint around the limb. Dr. Weir's memory of Dr. Parker's injury may be revised to the extent that Dr. Parker used to present his own arm as an example of the fact that even with the best possible surgical care deformity might persist after Colles' fracture.

THE MEDICAL NEWS.
A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. 80. NEW YORK, SATURDAY, APRIL 26, 1902. NO. 17.

ORIGINAL ARTICLES.

PROSTATECTOMY.[1]

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THE past decade has seen a wonderful advance in our knowledge of diseases of the bladder, and this advance has been largely due to the increased employment of suprapubic cystotomy for stone, devised by Franco in 1556. During the past twenty years the suprapubic incision served the same purpose as exploratory laparotomy. Direct examination, both visual and digital, has resulted in devising new procedures as well as the development of old methods of operative interference. Considered from a scientific standpoint, the surgery of the prostate is of comparatively recent date.

Statistics made during the past, what might be called the forming stage of prostatic surgery, should be considered only in a general way. During such a period of incomplete knowledge and imperfect diagnosis surgeons lacked judgment as to the best operation for the condition present. The result was that operations were deferred until the patients were nearly moribund; they were hasty and incomplete because made upon the worst cases when the symptoms demanded immediate relief, the condition itself being one occurring upon the declining side of life, when sclerotic arteries and degenerative changes, especially of the kidneys, are common. If one place dependence upon statistics, palliative operations were more fatal by far than the more recent operations for radical cure. Present statistics to a large extent indicate the judgment and skill of the operator in diagnosticating conditions and choosing methods of attack suitable to the case. The surgeon who adjusts the operation to the patient, and not the patient to the operation, is the most successful.

Most of the literature upon the subject of prostatic surgery has been written by operators who advanced some special method of operation or plan of attack, regardless of the indications. It is unnecessary to dwell upon the diagnosis of these cases. Every male over fifty years of age who complains of frequent micturition of small amounts, sudden stoppages of flow, the symptoms extending over some period of time, or who reports that total retention has occurred, requiring catheterization or aspiration, leads the surgeon to think at once of prostatic hypertrophy or of stone. The diagnosis is completed by rectal examination, sounding of the bladder, and the examination of urine passed, which latter determines the question of cystitis and its character. By passing a catheter while one finger is inserted in the rectum the depth of the prostatic urethra can be estimated by the distance traversed in the prostatic portion before the urine flows. The quantity of residual urine is now ascertained, the condition of the bladder muscle is determined, also the size of the bladder by irrigation. The cystoscope will be of practical use in a small number of cases. If the condition be a surgical one, the next important step is the general examination of the patient with regard to the condition of the heart, arteries and nutrition, general appearance and age. An important factor is to find the relative proportion of urine passed during the night as compared with that passed during the day. The danger of uremia in those who have high-tension arteries, quick-closing heart valves, contracted kidneys which secrete during two-thirds of the twenty-four hours, low specific gravity urine at night, is greatly to be feared. After such an examination we can establish a fairly accurate ratio between the disability, on the one hand, and the dangers to be incurred and benefits to accrue from operation, on the other.

The use of a catheter once or twice a day may be recommended in certain cases, with such restrictions as to its care as can be impressed upon the patients. Few individuals lead a comfortable catheter-life, and those who obtain relief for long periods in this manner only impress upon our minds that the average catheter-life is from four to six years. In many cases it will not be necessary to give any treatment further than general or hygienic.

Meyer has classified the various methods of operating for prostatic hypertrophy into direct and secondary.

Of direct methods we have suprapubic, subpubic, urethral, perineal and sacral routes; Mercier's method of prostatotomy, injections into the gland, stretching and massage. Electrically we have the galvanic current and the cautery.

The more indirect methods are castration, vasectomy and Bier's operation of ligating the internal iliac arteries. Of the various methods of suprapubic operation we have:

(1) Suprapubic prostatectomy without perineal drainage (McGill). (2) Suprapubic prostatectomy with perineal drainage (Fuller). (3) Suprapubic prostatectomy with perineal section and drainage (Nichol). (4) Suprapubic cystotomy with perineal prostatectomy without perineal drainage (Nichol). (5) Suprapubic cystotomy with perineal prostatectomy and perineal drainage (Alexander).

A careful review of the general literature of the subject would indicate that about one-half of enlarged prostates can be reached either from above or below equally well, according to the skill and inclination of the operator, that about one-fourth can be reached better from above and one-fourth better from below, and from anatomical or pathological conditions the combined operation will be necessary in certain cases.

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[1] From advance sheets furnished by courtesy of the Editor of the St. Paul Medical Journal.

There is not much material difference of opinion among the numerous writers upon the operative and autopsy findings of enlarged prostates. Watson states that the most common enlargement is bilateral and median in about one-half the cases, median only in one-third, bilateral only in twelve per cent., unilateral with median or separate pedunculated growths being rare. This about conforms with the statements of Sir Henry Thompson and Dittel, while McGill lays some stress upon the uniform circular hypertrophy. S. Alexander, from a larger number of autopsies, presents the most practical points from an operative standpoint:

"The layer of prostate behind the urethra does not enlarge. The enlargement occurs in the lateral and developing middle lobes. The lateral growths depress the urethra, the middle raises its inner posterior end, thus increasing the length and curve of the prostatic urethra. The lateral lobes are nearly always encapsulated and glandular. The middle enlargement may be of three varieties:

"First, muscular; those cases with a bar. Second, glandular and then encapsulated. Third, hypertrophy of mucous glands and bladder tissue."

Our choice of operation will be influenced by known and unknown conditions. Could we accurately diagnose the cases of muscular bar, the prostatotomy of Mercier or the Bottini cautery operation could be considered, but to cut through the capsule of a glandular enlargement and not remove it is surgical insult. Of known conditions which influence our choice, the stout individual with thick perineum, long prostatic urethra and high lying prostate is one in whom a suprapubic or a combined operation will be indicated. Those with large dilated bladders may be reached by suprapubic incision, while the stiff-walled contracted bladder is possibly more suited to perineal attack. Those in whom stone is present and the condition of the bladder is unkown, but presumably with enlarged prostate, are best explored from above. Those who have had a previous suprapubic cystotomy for stone or drainage are best operated upon from above. By unknown conditions we are influenced as well; for instance, in cases of symptomatic stone, with none found by search, but with known enlarged prostate, suprapubic incision gives better bladder exploration.

In the emergency operations made in the country, when retention is present and immediate relief demanded but neither time nor facilities for careful examination, the suprapubic opening is indicated. Those with cystitis and old or acute secondary changes in the testes, and such cases are not rare, will often improve greatly after castration.

We still have a large class of prostatic sufferers in whom there are no symptoms of stone, little or no cystitis and short perineal distance, and for whom a perineal operation is unquestionably the better method.

The ease of operation, perfect drainage and early recovery in chosen cases no doubt justify this choice; the special retractors of Ferguson and Syms much simplify the accessibility of the gland from below, and it is quite possible from present indications that this method will be developed into the operation of the future by making earlier diagnosis of conditions and operating before these cases reach the stage of necessary suprapubic incision. The perineal operation may then bear about the same relation to the suprapubic that the radical operation for hernia does to the radical operation employed in cases of strangulation.

Suprapubic Operation.—After the usual preparation for operation one-sixth of a grain of morphine is hypodermically administered one-half hour previous to operation; this generally reduces the amount of anesthetic required. Ether is to be preferred but chloroform is more often indicated. The patient is placed in Trendelenburg's posture. A catheter is inserted, the bladder irrigated and inflated with air, and a rubber band applied to the penis to retain the air pressure. This method of Bristow's has displaced fluid tension and the Peterson rectal bag, and ordinarily gives from one and one-half to three inches of space between the peritoneal fold and the pubic bone.

A vertical or transverse incision is made down to the recti muscles with blunt separation of recti and digital separation of areolar tissue above the bladder, which is easily felt; the wound is retracted and two sutures are applied to the bladder wall, which act as tractors, the bladder is incised and digital exploration made. If it be considered best to complete the prostatectomy from below, the superior opening is used to force the gland down upon the enucleating finger in the perineum. Should the operation be made from above, the tendons of the recti muscles are cut laterally one-half or three-fourths of an inch each side of the incision. The bladder incision is enlarged and one blade of the scissors is passed into the urethra, the other over a projecting lobe and the capsule incised, the enucleation being made with the finger. Single pedunculated tumors are removed with scissors, cold snare, or by morcellation. This latter method is not employed if it can be avoided, as it leaves tags of tissue which must undergo necrosis. An assistant can make strong perineal pressure and upward pressure with two fingers in the rectum against the prostate, or the operator can temporarily employ a rubber glove on one hand for this purpose.

Muscular bars are treated in sight, by cautery or prostatotomy. Hemorrhage, the bugbear of surgeons in this work, may necessitate a gauze pack, which must be so placed as to be brought out above, or by perineal incision, or in form of a circular pack fastened to a thread passed through the urethra and drawn out through the penis, when removed as done by Keyes. The Witzel method of closing the bladder by folding its wall over the tube for drainage is very successful in preventing leakage in suprapubic drainage. When, owing to certain conditions, this cannot be done, the automatic siphon suction apparatus of Dawbarn is very useful. Some operators fasten the bladder to the abdominal incision. This favors a lack of drainage in the space of Retzius, and after recovery these patients complain of pain during urination, the concentric muscle fibers then working from two fixed points, viz., the base and the point of attachment above.

The suprapubic operation requires from three to five weeks' hospital care, although in the aged it is best to get the patient out of bed as soon as possible.

Perineal Operation.—With regard to the various perineal operations upon the diseased prostate, there are but two methods which are at present advocated. There are the median and the curved transverse or trap-door incision, made with the patient in the lithotomy position. Those who use the median incision dilate the wound as much as possible, and after incision of the capsule and partial separation of the enlarged mass employ morcellation forceps for its removal. A tubular drain and gauze pack complete the operation. The transverse curved incision is one giving much more room, and is altogether more satisfactory. Commencing on one side between the anus and tuber ischii, it passes forward to a median point back of the bulbar prominence, and then to a point upon the opposite side of the anus near the tuber ischii. Such a wound, when deepened to the prostate with the rectum pushed back from its attachment, has the general shape and size of a large vagina. The capsule over the prostate is incised transversely and caught beneath the posterior retractor. The glands are separated by the finger and hook catspaw retractors employed to roll the tumors out of their position. Syms makes use of a water-dilated rubber ball which is passed into the bladder empty through an opening in the membranous urethra and drawn through the perineal wound by its connecting rubber tube. A. Ferguson uses a special staff retractor, passed through the penis and serving as a urethral guide, and also to force the various lobes into the wound. A No. 16 sound has proven very satisfactory for this purpose. A large tubular drain into the bladder and gauze packs of prostatic cavities are brought out of one side of the incision, the balance of which is closed by a suture. The drainage and pack are left for an average of six days.

Constituents of Cigar Smoke.—No work of importance has been done upon this subject since Kissling's observations, made in 1893. J. Habermann (Z'tschft. f. phys. Chemie, Vol. 33, p. 55) has given a modern presentation of this interesting topic. Carbon monoxide, sulphurous acid, hydrocyanic acid, pikolin bases and nicotin are the important products found and described in detail.

THE DIAGNOSIS AND OPERATIVE TREATMENT OF PROSTATIC HYPERTROPHY, WITH REMARKS ON THE COMPLICATIONS BEFORE AND AFTER OPERATION.[1]

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THE principal symptoms indicating the presence of an enlarged prostate are frequency of urination, pain and spasm, and it is for their relief that the surgeon is usually consulted. An examination is then made in order to ascertain the size of the gland, the amount of obstruction it offers to urination, and the condition of the bladder and kidneys. Rectal examination shows us the size of the posterior part of the gland from its apex to its base, and tells us whether this distance is more than one and a quarter inches, the normal length of the gland. But it must be remembered that, as the hypertrophy tends to grow in the line of least resistance, it finds the urethral covering (wall) much easier to displace and thus tends to grow upward and backward, often making the vesical base of the gland higher up than the rectal. The result of such an extension would be to elongate the urethra or to cause a thickening of the gland with consequent deformity just in front of the internal urinary meatus, probably raising its urethral floor and giving rise to obstruction sufficient to prevent the patient from fully emptying his bladder. To ascertain this more accurately it is necessary to pass a catheter and to note the distance to which it must be introduced in order to draw off the urine. The usual distance, measured from the eye of the catheter, is eight inches and any distance beyond this would show an elongated prostatic urethra due to hypertrophy of the gland about it. At the same time the amount of residual urine that is present in the bladder can be noted.

A stone-searcher should then be introduced into the bladder to see whether a calculus be present, and its beak is turned down and caught behind the vesical base of the gland. The length of the urethra can thus be again measured, showing the distance from behind the obstruction to the external urinary meatus; while the searcher is in this position the tip of the finger inserted into the rectum can feel the end of the instrument in the bladder, thus determining whether the vesical base of the gland is further up than the base as felt in the rectum. Sometimes, in thin individuals, the prostate can be palpated bimanually, as one would examine a uterus, and then its exact size can easily be determined.

By means of cystoscopy we can determine something of the contour of the base of the gland, although the procedure is sometimes of little value on account of the cystoscope not being long enough to enter the bladder, and in other cases because the surgeon is not able to outline distinctly the irregular vesical base. In cases in which the gland seems on rectal examination to be very large and in which there is a urethral impediment at seven inches or more and the urethra is lengthened, we can say that hypertrophy of the lateral lobes exists; but if the gland seems small and similar conditions exist, we must think that the principal seat of the hypertrophy is in the middle lobe.

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[1] Read before the Medical Society of Lynn, Mass., 1901.

An examination of the urine will show us if pus is present; if in addition epithelial cells from the bladder be found, we can infer that a cystitis exists, whereas if there be renal epithelium together with casts, it will be seen that nephritis is also present. In order to find out more about these conditions it will be necessary to examine the bladder with the cystoscope and to test the working power of the two kidneys by determining the percentage of urea found in the urine drawn from each ureter.

Indications for Operation.—If the kidneys be in very bad condition medically or surgically, and if they be not improved by treatment, an operation is contraindicated, as uremia may follow, shortening life instead of prolonging it. If there be very little residual urine and if the kidneys be in good condition, it may be well to try at first stretching the prostatic urethra and washing out the bladder, if cystitis be present; but if there be considerable obstruction, as shown by the amount of the residual urine, and if the kidneys be affected in a mild degree, it is better to perform an operation as soon as possible. It must be remembered that prostatic symptoms occur most frequently in the fall of the year, and that they may be relieved by appropriate local and general treatment.

Complications before Operation.—Attacks of epididymitis, hematuria and urethral fever are complications which urge a patient more than anything to resort to operative procedures. Stone in the bladder is a frequent complication of enlarged prostate and should receive attention. If the prostate be large, in a case of stone, it would perhaps be better to do a suprapubic lithotomy and a prostatectomy. If a Bottini prostatotomy be contemplated, it may be better, however, to perform this operation first, and to take advantage of the increased size of the urethra thus secured for the manipulation of litholapaxy. One must not forget that stone in the bladder is a more frequent complication of enlarged prostate than it is thought to be, and that the reason why we do not find it oftener is because we do not like to introduce solid instruments into the bladder, fearing to wound the prostatic urethra. Very often, in old men with slightly enlarged prostates, it is the stone and not the prostate that is the cause of the trouble.

If there be a stricture complicating hypertrophied prostate, the operation can be made to include both conditions at the same time. It is extremely rare, however, to find strictures in men of the prostatic age, and almost all cases of so-called stricture in old men are cases of prostatic impediment in the posterior urethra. There are exceptions to this rule, of course, and not long ago there was sent to me for prostatic operation a patient in whom no prostate could be felt, but who had an impermeable stricture in the deep urethra. After performing a perineal section I palpated the prostate with one finger in the prostatic urethra and another in the rectum and found that the gland had been almost completely destroyed.

In regard to the condition of the kidney and bladder it may be said that the bladder is the least important, because it makes no difference how badly involved it may be, it will be benefited by the use of internal antiseptics and by irrigations through the catheter. An involved bladder does not count so much against the operation as does kidney involvement. It is surprising to see how often the bladder can empty itself almost entirely after a prostate operation, even if it has been previously considered atonic and years have been passed in catheter life. Diseased kidneys, however, whether medically or surgically involved, are always contraindications to surgical interference upon the prostate, as in such cases a renal congestion followed by uremia and death may take place. If, then, the kidneys be diseased and an operation be demanded, a prostatotomy should be performed as the operation of choice, inasmuch as statistics show that the danger from this operation is very much less than from prostatectomy.

Valvular disease of the heart and fatty heart are indications against operations on the prostate if the heart action be poor. In the first class of cases the operation may be borne if there be sufficient compensatory hypertrophy of the heart muscle; in the second class, it is always exceedingly dangerous.

Choice of Operation.—The indications which would determine a choice between prostatectomy and prostatotomy (Bottini's operation) are the age of the patient, the size of the gland, and the condition of the bladder and kidneys. It may be said in general that cases in which there are slightly diseased kidneys and prostates that do not feel large on rectal examination, although they cause considerable urethral impediment, are cases for prostatotomy. On the other hand, middle-aged men with large prostates, as felt through the rectum, with good kidneys and sound bladders are subjects for prostatectomy.

Age is an important consideration, for the older the patient the more liable he is to die from shock and asthenia; therefore in a very old man, if the prostate be of the right variety, a Bottini operation should be performed. Cases of men over ninety years of age have been reported as successfully operated upon by this method. Old age is, however, not an absolute contraindication to prostatectomy, as men over seventy-five years old, having good kidneys, non-infected urine, but very large prostates, have successfully undergone this operation.

Regarding the size and shape of the prostate as influencing the choice of operation, it may be said that cases in which the prostate feels very large by rectum are suitable for enucleation; while cases in which the prostate does not feel considerably enlarged on rectal touch, but which offers a distinct impediment to the introduction of instruments into the prostatic urethra, and in which there is consequently a considerable amount of residual urine, are best suited for prostatotomy. In this class of cases are those that present the so-called "prostatic bar," which is so often spoken of in connection with the subject of prostatic hypertrophy.

Preparation of the Patient for Operation.—But little time is required to prepare a patient for a prostatic operation if the kidneys and bladder be in good condition and if there be not much residual urine. If, on the other hand, these organs be markedly involved and if there be a great deal of residual urine, the duration of the preparatory treatment will be longer.

Prostatic patients are often sent to surgeons for operation while suffering from an attack of acute retention of urine. Such a patient should be handled with the greatest possible care and, if possible, should be placed in a hospital. It is a sore temptation for the house-surgeon in such a case to draw off all the urine in the patient's bladder. If this be done and if the patient's kidneys be already damaged surgically or medically, acute renal congestion may take place, with the result that the amount of urea secreted, which probably had been deficient, may be very small indeed, and the patient may become uremic and may die in a few days or even in a few hours. If, with great difficulty, the patient succeed in rallying from such a uremic attack, he will probably have a cystitis to contend with and it will take him some time to recover from this complication. It is well, therefore, to remember the following rule in retention: *viz.*, never draw off more than sixteen ounces of urine the first time; then wait four or five hours and draw twelve ounces more; finally, eight ounces should be drawn every two hours until the bladder has been emptied. Personally, I have seen hematuria follow the withdrawal of twenty ounces at one time and death from uremia result after the withdrawal of twenty-eight ounces.

Factors Governing Choice of Treatment in Prostatics.

Indications.		Prostatectomy.	Prostatotomy.	Catheter Life.
1.	Age.	Under 70 years.	Any age over 50 years.	Any age over 50 years.
2.	Kidneys.	Normal.	Fairly healthy.	Considerably diseased.
3.	Bladder.	Fairly healthy.	Fairly healthy.	Atonic.
4.	Prostate.	Markedly enlarged as felt by rectum.	Moderately enlarged as felt by rectum.	Any size.
5.	Urethra.	Decided impediment. Elongation of the canal.	Distinct impediment.	Catheterization possible without difculty or complications.
6.	Residual urine.	Over four ounces.	Over four ounces.	Over four ounces.
7.	Special symptoms.	Frequency of urination, pain, tenesmus and burning.	Frequency of urination, pain, tenesmus and burning.	Frequency of urination, pain, tenesmus and burning. Heart feeble, arteries diseased.
8.	Complications.	Attacks of urethral fever, epididymitis and hematuria (kidneys normal.)	Same, but kidneys only fairly healthy.	Same, but kidneys too much diseased for operative procedure.

The bladder should be carefully handled in all cases of retention, and a catheter should be introduced as often as indicated by the amount of urine passed and the frequency of the desire to urinate. As a rule, in a case of complete retention the catheter should be passed four or five times a day. When there are twelve ounces of residual urine, the catheter should be passed four times a day; when the residual urine amounts to from eight to ten ounces, three times a day; when there are from six to eight ounces, twice daily, and when the residuum is below six ounces, once a day.

In cases of acute retention, after the bladder has been emptied, the catheter should be used at first once every four hours; then, after the bladder is more tolerant, every five hours; later, every six hours. If cystitis be present, the bladder should be washed out twice a day with boric-acid solution and once every other day with a solution of silver nitrate, one part in four thousand. In addition, some urinary antiseptic should be given, as has been stated. Under such treatment the amount of residual urine will begin to decrease and more urine will be passed spontaneously. The catheter may then be used with diminishing frequency. It may be said, as a rule, that no patient with a marked degree of retention should be operated upon until he has been broken into "catheter life," and I believe that if this rule were heeded the mortality from prostatic operations would be much smaller.

If the kidneys be affected medically, *i. e.*, with nephritis, they must be brought into as good a condition as possible by enjoining a strict milk diet, by giving large quantities of water to drink, and by aiding Nature if necessary with digitalis, nitroglycerin, caffeine, niter, the potassium salts, and other diuretics. If the kidneys be surgically involved, as, for example, in pyelonephritis, they may be kept flushed out with large quantities of water, and the diuretics mentioned, as well as such urinary antiseptics as urotropin, salol, sodium benzoate, and others, will find a place in the treatment of such cases.

The immediate preparation of the patient for a prostatic operation varies, in a measure, according to the anesthetic to be used. If local anesthesia only be employed, or if nitrous oxide be used, the patient may take his meal or meals at the regular time before the operation; but if ether or chloroform is to be given, he should go without food on the day of the operation. In any case, the bowels should be moved and the rectum washed out just before the patient is brought into the operating-room. The washing out of the bladder should be done prior to the administration of the anesthetic, as valuable time is lost in doing this afterward, and it must be remembered that in such operations the length of the narcosis should be limited as much as possible.

Prostatotomy.—It is not necessary to say much about the Bottini operation, as it is now familiar to everybody. To recapitulate the steps of this operation very briefly, it suffices to say that from six to eight ounces of a saturated solution of boric acid are first introduced into the bladder; the Bottini instrument is then inserted, and its beak is turned downward and caught behind the base of the prostate. If the instrument does not enter easily, the patient's hips should be elevated. Cold water from a reservoir is allowed to flow through the hollow part of the instrument in order to cool it during the operation. The electricity is now turned on and the posterior cut is made. The instrument is next turned to one or both sides, or to the top, and similar incisions are made. The cut through the base is usually from three to four centimeters in length and is the most important one, while those through the sides and the front are from two and a half to four centimeters in length. The strength of the current used is about forty-five amperes.

Complications during Prostatotomy.—The electricity may give out, thus allowing the blade to cool while it is cutting, and, if the operation be continued, the blade will be turned. It is therefore necessary to watch the hand of the dial on the battery box during the operation, and the instant we see it swinging back to zero the screw controlling the blade must be quickly turned and the blade drawn back into its slot, thus discontinuing the operation. Batteries are heavy and very apt to give out at the critical moment, and I think it is better to use the rheostat and transformer in connection with the "street current," wherever possible.

Movement on the part of the patient during the operation is also an annoying and sometimes a serious complication. A movement of the patient away from the surgeon may cause the blade to go over the prostate into the surrounding tissues and necessitate an immediate perineal section. In such cases the bladder should be drained through the perineal tube.

In some instances difficulty has been experienced in passing a catheter after the prostatotomy, probably because the operation has disturbed the urethra to such an extent that it will not admit an instrument that easily went in before prostatotomy. In such an event, also, a perineal section with provision for bladder drainage should be performed. It will be seen, therefore, that in any case it is well to have the consent of the patient to do whatever the exigencies of the case demand during the operative procedure.

Complications after Prostatotomy.—If there be but a few ounces of residual urine, the use of the catheter may be discontinued, provided the patient pass a sufficient amount of urine spontaneously. If not, the catheter should be passed occasionally to see how much urine is present. If the patient has had complete or almost complete retention before the operation, a plugged catheter should be retained for a few days, the plug to be withdrawn from four to six times daily. Urotropin or salol, in doses of ten grains each, should be given three times daily, and large quantities of water should be drunk. If the quantity of urine passed be small at the end of forty-eight hours, a mixture containing twenty grains of potassium acetate and thirty minims of spirits of nitrous ether should be given three times daily in a glass of water, and in addition large quantities of water should be drunk to promote diuresis.

Within from twenty-four to forty-eight hours after the operation there is usually a reaction, consisting of a chill followed by a rise of temperature to from 101 to 105° F. This is most alarming, although it rarely causes death. At the time of the chill hot bottles may be placed at the feet of the patient, hot whisky, with quinine and codeine, given internally, and extra blankets should be put on the patient. The temperature then begins to go down and materially decreases as soon as the diuretics produce a good flow of urine. As a rule, the danger point may be said to have been passed when this occurs.

Hemorrhage is not a frequent complication, but if it should occur in a mild form the bladder should be flushed out with hot water, or, if the bleeding be severe, a perineal section should be performed and a large tube should be inserted and well packed in order to stop the hemorrhage through pressure.

If cystitis be present at the time of the operation, the bladder should be washed out afterward through a catheter twice a day with boric-acid solution and every other day with a nitrate-of-silver solution. Patients can train themselves to wash out their own bladders and urethræ. It is very convenient to be able to wash out the urethra in case there is a retained catheter. This can be accomplished by filling the bladder with the solution through the catheter and by directing the patient to pinch the catheter and to try to pass his urine. In this way the fluid will be passed along the sides of the catheter, flushing the urethra from behind.

One of the most obstinate symptoms to treat after the operation is the burning and scalding before and after micturition which the patients experience. This is often due to passive congestion of the bladder and gives rise to frequency of urination.

After the operation sloughs are thrown off for four weeks, and it is not until the sloughing has entirely ceased and until the gland has contracted as the result of the diminished and cut-off blood-supply that we can estimate the result of the operation.

Often the surgeon will receive discouraging reports from a patient after prostatotomy, but it must be remembered that such prostatics are sometimes markedly neurasthenic and that, if the kidneys be in good condition and the bladder draining well, there is no cause for alarm. If the kidneys be working too freely, it must be regarded as a bad sign, especially if the quantity of urine be large the specific gravity low, and the pulse rapid. These patients usually have pyelitis or interstitial nephritis.

Results of Prostatotomy.—The results of this operation are most favorable. I will quote from Freudenberg's article, published in the *Centralblatt für die Krankheiten der Harn- und Sexualorgane,* 1900, in which he gives statistics of 753 cases. In 622 of these the operation was successful and only 44 deaths, or 5.8 per cent., were recorded.

Prostatectomy.—There are many methods of performing prostatectomy, but I shall mention only the operations that I have personally devised and am in the habit of employing, namely, the vesicorectal and the perineoprevesical. The vesicorectal method is briefly as follows: A suprapubic cystotomy is first performed. Two fingers of the left hand are inserted into the rectum and the index finger of the right hand into the bladder and the prostate is palpated bimanually. A pair of sharp-pointed curved scissors are passed into the bladder and the points are thrust into the most prominent portion of the prostate, just behind the internal meatus. The blades are now opened and the tissues covering the gland are torn. The finger-tip is inserted into this tear and the finger worked around between the gland and the capsule, while counterpressure is made by two fingers in the rectum. After the gland has been enucleated I cut through the floor of the prostatic urethra in order to prevent the formation of a pocket. The patient is then brought into the lithotomy position, an external urethrotomy is performed, and a perineal tube is inserted for drainage. Another tube is inserted into the bladder suprapubically and that viscus is sewn tightly up to this drain. The muscles, fascia and skin are closed. The suprapubic tube is left in for one week and the perineal tube for three or four weeks. This is the quickest way of removing the prostate with which I am familiar.

The perineoprevesical method consists, first, in the making of an incision suprapubically into the prevesical space without going into the bladder. The patient is then placed in the lithotomy position and an external perineal urethrotomy is performed; after this a pair of sharp-pointed scissors are passed into the perineal wound and the tissues over the apex of the prostatic urethra are cut through. The tip of the right index finger is then pushed in between the capsule and the gland, and enucleation is begun, while counterpressure is made over the base of the prostate by the fingers in the prevesical space. After the gland has been removed a perineal drainage tube is inserted into the bladder and the skin and superficial perineal fascia are sutured close to it. The suprapubic wound can then be closed or a drainage tube may be left in it for a day or so.

This I consider to be the safest method of performing prostatectomy that has yet been devised, although it is not as rapid as the rectovesical method just described.

After a prostatectomy the patient should have a hypodermatic injection of one-thirtieth of a grain of strychnine, and a pint of hot saline solution by enema every four hours, to be retained, alternating with water by mouth, hot bouillon or whisky, in such a way that the patient gets something every hour. Water should be pushed from the first, and, if the patient vomit, more should be given.

Complications after Prostatectomy.—Shock is usually due to the rough manipulation of the part, for it must be remembered that this is one of the most sensitive centers of the body and is richly supplied with nerves by the sympathetic plexus. I have noticed that during this operation the condition of the patient suddenly changes after enucleation of the gland and well remember in one of my first cases the expression of an expert anesthetist, who, while holding the cone with one hand and the patient's pulse with the other, feelingly remarked, as I pulled out the gland, "He must have felt that." The patient's pulse had suddenly gone up and become irregular, then steadied itself at an increased rate. For this reason we must be prepared to act quickly at the time, by giving strychnine hypodermatically and to anticipate shock, if it has not already occurred, by giving more strychnine and hot saline enemas alternately. Hemorrhage is also greatly to be feared, for it is often profuse. I do not think, however, that it is so alarming as it often appears to be, as it may be mixed with urine and with the solution used. Very hot water irrigated into the hollow where the prostate has been will usually stop the bleeding. If not, the suprapubic tube which goes down into this cavity should be carefully packed around with gauze, as well as the tube entering by the perineum.

After every operation on the urinary tract renal congestion followed by uremia is apt to occur, especially if the kidneys are damaged medically or surgically. With the object of preventing this, is is desirable to stimulate the activity of the kidneys as soon as possible. This is most easily done by giving the patient large quantities of water to drink, and it is remarkable how much fluid can be tolerated in this way. I can recall one case in which over a gallon of water was given during the first twelve hours following the operation.

Difficult drainage is another cause for alarm, as it gives the patient great discomfort and is a source of worry to the surgeon. It is usually due to a plugging of the perineal tube by blood-clots or shreds. Naturally we should always watch the drainage from the perineal tube, and, if it be not free, the cause of the obstruction should be investigated. If it occur before the fourth day, at which date the suprapubic drainage is withdrawn, the bladder should be flushed out through the suprapubic tube, which will usually establish a flow through the perineal tube. In case, however, this is not sufficient, the bladder should be well flushed out from below, and after the suprapubic tube has been withdrawn the bladder should always be flushed out through the lower tube. The perineal drain should be allowed to remain *in situ* for three weeks, after which a retained catheter may be passed into the urethra to remain, probably, until the perineal wound has closed.

If the patient has a temperature after the operation for some time, it is a sign that suppuration has taken place as the result of urinary leakage and consequent septic absorption. This is best combated by urinary antiseptics given internally, by searching for and draining any accumulation of pus that may have taken place around the neck of the bladder, by washing the bladder out with an antiseptic solution, and by supporting the patient's general condition with alcoholic and other stimulants.

Epididymitis occurring after the operation is due to inflammation of the prostatic urethra primarily present or excited by the presence of the perineal tube in this passage. It is best treated by ichthyol ointment, or by hot applications and rest. Fistulæ may follow either the suprapubic or the perineal operation. As a rule, if the perineal drainage be free, the suprapubic wound will close in three weeks. If the perineal wound does not close after the drain has been withdrawn, it is advisable to introduce a retained catheter and to allow it to remain *in situ* until union has taken place. Incontinence may follow a prostatectomy on account of the stretching of the fibers of the vesical sphincter through the prostatic hypertrophy, or on account of the muscle having been torn during the operation. It is easy to see how lax the muscle would be at such a time, but its tone is usually reestablished later without resort being had to any instrumental interference.

Neurasthenia is a condition from which a great many prostatics suffer prior to any operative procedure. It is due to the interference with the functions of the internal genitals through the pressure on the follicles and ducts of the prostate as well as on the ejaculatory ducts which run through it. It can in a way be compared to the menopause in the female. This neurasthenic condition is markedly increased after operative procedures on the gland, and one frequently sees men, who have always been strong-minded and self-reliant, become irritable and despondent after prostatic operations and even weep on the slightest provocation. This can probably be accounted for in prostatectomy by the arrest of the functions of an important system, the genital, by tearing out the prostate gland, its central point, and destroying the ducts which pass through it as outlets of other organs beyond.

Results of Prostatectomy.—In the literature of the last few years there have been reported 152 cases of prostatectomy by the suprapubic, perineal, and the combined methods. Of these 95 were suprapubic operations and the remainder perineal or combined. Among these cases there were 25 deaths and 127 recoveries. Of the latter class of cases, 17 are spoken of as failures, 27 as successes, and the remainder as good results, improved, or recovered. It is difficult to say, therefore, what the exact results were in the cases spoken of as recoveries, excepting in the cases spoken of as failures, and in those recorded as cured or successfully operated upon. Recovery, it must be remembered, may mean that the patient has either recovered from the operation or recovered his former health.

In comparing the results which I have collected in these statistics on prostatectomy with those of prostatotomy, it will be noted that in prostatotomy 86 per cent. of the cases were cured, 5.8 per cent. died, and in 11 per cent. failures resulted; while in prostatectomy 78 per cent. of the cases were cured or improved, 16.5 per cent. died, and in 3 per cent. failure resulted. It will be seen, therefore, that the mortality in prostatectomy is three times greater than that of prostatotomy. In those who survive prostatectomy the failures are not as frequent as in those operated by the Bottini method. It is difficult to say, in fact, what constitutes a cure in these Bottini cases. It seems to me that if a patient can empty his bladder of all urine, excepting perhaps half an ounce of residuum, the result obtained can be said to be very satisfactory, especially if the patient be relieved of all his symptoms. Of course, the surgeon and the patient look upon the result from different viewpoints. If the amount of residual urine be very materially decreased and if the condition of the urine be improved, the surgeon considers the result satisfactory; on the other hand, the patient does not consider the result to be good unless the disagreeable symptoms, such as the frequency of urination, pain, tenesmus, and burning, be removed. It may be said that in those who recover from prostatectomy the results are much better and more permanent than in patients successfully operated on by the Bottini method. In prostatectomy we never have to perform the operation but once, while prostatotomy may have to be repeated.

Conclusions.—To sum up the clinical and statistical data obtained upon the subject of prostatic operations during the last few years, we must conclude:

1. That the general practitioner should be educated to palpate the prostate and to use the other simple means of diagnosis employed in determining the shape and size of the organ. In default of previous training in rectal palpation, he should

at every opportunity familiarize himself with the feel of a normal prostate, and should thus educate his touch for prostatic diagnosis.

2. That the prostate corresponds pathologically in the male to the uterus in the female, and that its examination is just as important as uterine palpation, in which the general practitioner is as a rule far more expert.

3. That in prostatics the care of the bladder before operation is a prime factor. The importance of training such persons to observe the minutiæ of catheter life, of making the kidneys as active as possible, and of rendering the urine as nearly normal as possible before prostatic operations, cannot be overestimated.

4. That every prostatic operation should be preceded by a thorough general examination, including an examination of the heart, the arteries, the urine, the bladder (for possible presence of stone or tumor) and of the urethra (for possible presence of a stricture), as well as by palpation of the kidneys.

5. That the statistics of the results of prostatic operations demonstrate that the successful cases belong most frequently to the class having a small amount of residual urine and a moderate prostatic enlargement. An early diagnosis is, therefore, of paramount importance.

6. That the choice of the operation must be based upon the lines drawn here, according to the age, the resisting power of the patient, and the size and shape of the prostate, with special reference to the seat and extent of the hypertrophy, as well as the condition of the kidneys and bladder.

7. That in the conduct of prostatotomy as well as prostatectomy the prime object is to avoid so far as possible the occurrence of shock and to prevent the congestion of the kidneys by proper precautions during and by proper treatment after the operation.

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THE INDICATIONS FOR AND LIMITATIONS OF THE BOTTINI OPERATION.

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It is almost needless to state that this operation, like a great many others, has suffered from the exalted enthusiasm of those who have recommended it for every case of prostatitis. On the other hand, it has been severely condemned by many surgeons who have never practised it, but have derived their conclusions from theorizing. In reviewing this subject, I do not wish to discuss the minor details but desire to present the merits of the Bottini operation, and advance positive indications for, and limitations of, this procedure. Neither will I present an array of statistics, for it is understood that, when there has been such variance of opinion, they can only cause incorrect conclusions. In this manner, it will be possible to narrow down the cases fitted for this procedure to a comparatively small percentage of all the cases of prostatic hypertrophy which cause urinary symptoms, because it is these only that we can take into consideration.

In looking over the literature, we find a slight variance of opinion as to the exact *indications.* Some think that a true prostatic hypertrophy with urinary symptoms, whether with or without retention of urine, is sufficient. On the other hand, we are advised to wait until it is necessary to use a catheter to relieve the symptoms. I will not discuss whether or not it is advisable to operate only when we find an incomplete retention of urine or whether it is best to operate early before retention sets in; but when we have urinary symptoms, whether or not palliative treatment should be tried previous to any operative interference, it is certainly not too early to operate as soon as a patient is obliged to use a catheter; now, if the necessity for this precedure, catheterization, can be avoided altogether by an operation, the subject must be seriously considered.

It has been put forward that the earlier the operation, the less advanced the pathological condition; and that the less often do we find complications, the greater the chances for perfect success; and statistics have proved this to be true. Now, when it is positively known that manifold conditions of the prostate gland cause one and the same series of symptoms, it is absolutely necessary for the success of the Bottini operation to select the cases which are favorable for this procedure. In other words, we have certain *limitations* of the prostatic pathological changes which, when operated on by this method, permit of good expectations as to the ultimate outcome. These pathological changes of the gland, naturally, from the character of the operation, must occur just at the border between the urethra and the bladder. There can be no difference of opinion on this point.

Absolute *contraindications* can be put forward only in those cases in which the anatomical pathological conditions preclude the possibility of any favorable result. We can definitely state that when there are alterations in the prostatic urethra, such as nodules or angulated projections which may cause obstructions; or, in another distinct class, when the changes in the gland impair or completely abolish the functions of the bladder—cases belonging to either of these divisions are absolutely not to be considered for this operative step.

Innumerable writers have warned against operating when nephritis and other morbid conditions of the kidneys, pyelitis, ureteritis, cystitis, sacculated condition of the bladder or atony of the bladder are present. Then, again, when anteriosclerosis is very marked; in other words, when the general conditions are poor. Age of patients must also be considered, especially if some form of pyemia or arterial disease or both be present. Absolutely and most emphatically it can be said that good results have been obtained in some cases under these conditions; yet it is true that we must take these into consideration when deciding on such a step and must never forget that when one or more of these are present the operation should not be forced. Yet they certainly are only *relative contraindications.*

The so-called "prophylactic" Bottini operation of Orville Horwitz must, in every case, be followed by good results if the case be properly selected and if the technic of the operation be faultless, because in these cases none of the contraindications or relative contraindications are present. As with everything else that has withstood the test of time, so with this operation. Here we find objections raised to it largely by theorizers—surgeons who have never performed it, and by those surgeons whose results have been unfavorable on account of poor technic in poorly-selected cases, and by those who have operated but few times. It is true that objections of a solid nature have been brought to bear against this operative procedure. They are to a great extent not justifiable. The one objection which has been held up as the most flagrant of all is the charge of "working in the dark." With anyone who has the necessary diagnostic technic at command, this can scarcely be true.

I wish to emphasize the fact that if it be not possible to make a thorough cystoscopic examination, it is best not to undertake the operation. In other words, if cystoscopy cannot be employed, the operation should not be considered. Again, when using the Freundenberg-Bierhoff incisor, we can, just at the moment of beginning the operation/see whether or not the incisor is in the correct position. After each incision, an examination can be made. After the completion of operation, if the technic be correct, the different incisions as to depth and length can be examined. With all these helps at our command, the charge to a certain extent does not hold.

Another accusation is that cicatricial contraction results. This cannot be the case if the barrier or barriers be completely severed, yet here, again, it might occur if the technic be not correct. Still another charge is that it is necessary to operate several times in some cases in order to obtain certain results. This is becoming less necessary as the selection of cases has become more careful and the technic more perfect. That complications occur cannot be denied. For the most part they are caused by poor technic. Phlebitis, hemorrhage, incontinence, perineal abscess, vesicorectal fistula, acute cystitis, cystopyelitis and minor complications have been noted. We know that the anterior incision, which has been practically abandoned, was the cause of the phlebitis in the large majority of cases (here the vessels of the prevesicular space became involved), and again this can be put down to the lack of exact information in regard to the case. For this same reason, phlebitis of the hemorrhoidal veins has been caused. Again and again, this fact stares us in the face and we see why we may cause periprostatic and perineal abscesses, incontinence of urine, vesicorectal fistula, etc., simply because the minute diagnostic details are neglected previous to the operation.

It must be admitted that this is not the only cause, as accidents will happen here as in any other branch of surgery, but I do not bring this forth as justifiable. Take, for instance, a case in which the female and male parts of the Bottini instrument became displaced by cough, or other cause, because they had not been properly adjusted prior to making the incision. Our diagnostic means had told us to make an incision five centimeters in length, which would have been correct if the instrument had not been displaced; but, after displacement, the distal end of the incision was brought down into the triangular ligament or even into the perineum. I have one case of this character to record.

Hemorrhage of a dangerous character has been noticed immediately, as late as ten to twelve days and even longer after operation. In the cases in which it has occurred within twenty-four hours of the operation, it can scarcely be denied that the hemorrhage was due to a crushing of the glandular tissue and to the fact that the blade was not sufficiently heated to cause an eschar which would remain in place at the time of the return of the blade. Hemorrhages at a later period are caused, in a certain number of cases, by improper after-treatment, *i. e.,* by rough and unnecessary catheterization and insufficient care of bowels, diet, or by rising too early after operation—in other words, by lack of proper aftercare. Some of the late hemorrhages undoubtedly have been caused by the natural separation of the burnt tissue from the prostatic tissue, leaving small vessels patent. These certainly are few in number and cannot be avoided. Uncertainty of prognosis will hold in a certain number of operative procedures, but the uncertainty disappears in the ratio to the certainty of detailed diagnosis and correct technic. This cannot be doubted, for the truth is readily to be seen. For this reason, this objection does not hold true any more in this than in any other operative procedure.

In a recent article the statement was made that the Bottini operation is an easy one and that anyone can perform it. It certainly is best to contradict emphatically such a statement. It is on account of such teachings that we hear of such bad results and absolute condemnation of this operative procedure. It is a step to be taken only by one thoroughly familiar with the handling of instruments within both the bladder and the urethra, so as to have precise conception of each step in an operation with such an instrument as the Bottini.

Furthermore, it is necessary to be able and also to be willing to recognize at once any accident which may occur at the time of operation or any complication which may arise subsequently. By a secondary operative procedure, life can be saved in some cases; in others, the results of the Bottini operation may be improved. The results, in other words, depend oftentimes on the rapidity and accuracy with which any of these secondary steps are performed. To illustrate, in the case in which the instrument was displaced and in which I cut into the membranous urethra, as soon as I was certain of it, I made a median perineal incision and inserted a drainage tube. This patient made an uneventful recovery with very good results. In cases of severe hemorrhage a suprapubic cystotomy is often indicated.

It must not be forgotten that the after-treatment of this operation plays a part in the results. A patient after this operation immediately requires careful watching. Even should a permanent catheter be in place, we must be on the lookout for urinary infiltration, perineal abscess, etc. When such conditions are excluded and after the permanent catheter has been removed, the question as to how often and when to catheterize arises. This is not as important as by whom, because great care and delicacy should be employed.

This review is not an attempt to compare the results of one operation with the results of other methods, but an attempt to show that there is a limited number of cases in which the Bottini operation can consistently be recommended and in which the outcome must be satisfactory if the cases be carefully selected and the technic perfect. From this, it must be concluded that the operation stands on a perfectly safe and sound basis compared to any operative step.

From the foregoing, it appears to be justifiable to draw the following conclusions: Good results of the Bottini operation will depend (1) on the careful selection of cases; (2) on the proper technic of the operation and proper after-care; (3) on the immediate correction of errors or mishaps.

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GONORRHEA OF THE PROSTATE.*

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IN an essay, published three years ago,[1] I noted the extraordinary frequency of those complications of gonorrhea which are called blennorrhagic lesions of the prostate. Since then my effort has been confirmed by a number of writings made public, especially in the fourth session of the French Urological Congress. Among these were contributions by Denos,[2] Goldberg,[3] Hogge,[4] Janet,[5] von Frisch,[6] Jadassohn[7] and finally Casper,[8] who very explicitly detail the symptomatology of the disease; I may therefore now limit myself to some data thereon.

I have mentioned the frequency of gonorrheal involvement of the prostate. I may add that this complication appears very early, much earlier, indeed, than is ordinarily accepted. In many cases, despite the absence of subjective manifestations and despite absolutely clear second urine, the prostate is found diseased within eight days of the appearance of the first symptoms of gonorrhea. If gonococci persist from the third to the fifth day after an acute gonorrheal urethritis has come under treatment, and if no complications have appeared, and when the urethral mucosa has no para-urethral passages or congenital deformity, I suspect an extension of the gonorrheal process to the prostate, whether the second urine be clear or not.

The involvement of the prostate by the gonorrheal process can partially be prevented by therapy only in certain cases. I will briefly recur to this in the discussion of treatment. But adequate therapeutic measures surely enable us to limit materially the frequency, especially of gonorrheal posterior urethritis. Recent statistics have shown this.

To investigate this matter I studied 651 cases of gonorrheal urethritis from among my dispensary cases. These showed posterior urethritis in 210, or 32¼ per cent. I must, however, note that not a small number of these patients came under treatment with established posterior urethritis. In all the 210 cases the prostate was diseased, that is, in 100 per cent. of those with posterior urethritis. In 96 cases of gonorrheal prostatitis the disease was but eight days or less than eight days old. The diagnosis was based upon the microscopical and bacteriological findings in the prostatic secretion and then upon digital examination *per rectum*. Both examinations are inevitably necessary for the establishment of a definite diagnosis.

I omit from detailed consideration just now the special findings by palpation, as I do the frequency of disease of one or both of the lobes. I also omit from consideration in the present paper discussion of involvement of the seminal vesicles.

My attention has frequently been drawn to the fact that many authors found gonococci in the prostatic secretion of but very few patients. Equally the view prevails that the finding of gonococci in the prostatic juice is more difficult than their discovery in the urethral secretion.

Simple methylene-blue staining of the prostatic secretion enables me to establish the presence of gonococci in microscopical examinations in the majority of instances. In doubtful cases Gram's method, and occasionally cultures, were employed.

Examination of the 210 cases referred to showed: Gonococci, 179 times; other bacteria, 20 times; aseptic secretion with numerous leucocytes, 11 times. I am decidedly a partisan of the opinion that the presence of numerous leucocytes in the secretion of the prostate and seminal vesicles must be deemed pathological and indicative of prostatitis or seminal vesiculitis. This holds good even when the bacteriological findings are negative.

In many cases in which the urethral secretion does not for a long time show gonococci, they will not be found in the prostatic secretion either, as was the case of twelve patients reported by Cohen[9] of Berlin. The proof of the presence of gonococci in old prostatites may be very difficult.

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*Translated and presented on behalf of the author before the Genito-Urinary Section of the New York Academy of Medicine, Nov. 18th, 1901, by T. M. Townsend, M. D., of New York.

The establishment of a diagnosis, which is so important to the patient, requires repeated examinations and very thorough microscopy, not infrequently after the employment of provocative measures.

I will now enter into a consideration of consent to marriage and similar things connected herewith. I will, however, briefly note the observations concerning a patient who infected his bride five years after a physician had declared him cured of gonorrhea. There was no discharge and the absolutely clear urine carried no filaments, but the prostate showed two softened foci and the secretion expressed therefrom contained numerous leucocytes and albeit sparse, yet distinctly recognizable, gonococci. Secondary infection of the prostatic gland ducts may persist for decennia. This fact explains many cases of necrospermia and sterility.

To render microscopical examination of the prostatic secretion as free from objection as possible, I proceed as follows: After thoroughly washing the posterior and anterior urethra with a solution of protagol, I insert a sterile endoscopic tube to the end of the membranous portion and cleanse the mucosa in the field to absolute dryness. This cleansing is done with sterile cotton tampons. I then take from the tube the juice obtained by massage and examine it. In some cases I limit my work to thorough washing of both urethral divisions and avoid expelling the juice removed from the prostate by massage, by pressure upon the pendulous portion, as is often done. By this latter manipulation the contents of the glands and lacunæ of the anterior urethra are expressed and the results obtained are consequently not free from objectionable features. Even without pressure upon the pendulous portion, prostatic secretion almost invariably presents at the meatus, several moments after prostatic massage.

The examination by means of the tube must always be followed by washing of the anterior and posterior urethra. The fact that of 37 cases I examined in this manner one was affected with epididymitis fourteen days later, shows that no danger to the patient is incurred thereby.

Owing to the prostatic anatomical construction, the pathological conditions induced by gonorrhea are of a complex character. This explains the difficulties of therapy in these cases. I avow complete adherence to the very clear and logical exposure of these conditions which Janet[5] gave in his paper, "Traitement des Prostatites Chroniques," read before the last Urologic Congress. In keeping with the greater or minor cystic changes induced by catarrh in the gland-ducts, in relation to the patency or occlusion of their mouths, the success of treatment must be more or less rapid.

Virulent gonococci maintain copious secretion and keep open the distended gland-ducts. Evacuation of the gland then succeeds with astonishing readiness. Gonococci or other bacteria, *e. g.*, bacterium coli, the virulence of which is diminished, may be present for years in the gland without evoking marked secretion.

The inflammatory process gradually contracts or eventually occludes the duct-orifices, thus forming a material obstacle to the evacuation of the gland. This anatomico-pathological state shows that successful treatment can rest exclusively upon mechanical evacuation of the gland-ducts, attainable by massage of the gland through the rectum. The organ in question is of manifold configuration and it is of transcendent importance that the various foci be expressed in accord with the degree of inflammation in each; for this purpose varying degrees of pressure are required. It is evident that the only reliable instrument for this purpose is the physician's finger. All rigid instruments, such as have been proposed by Féléki[10] and Finger[11] for the purpose, are inadequate and prove injurious in many cases. It is my opinion that this form of massage should be performed by physicians and not by masseurs. But the finger cannot reach the most peripherally situated gland. To effect vigorous contraction of these parts Hogge[4] and Janet[5] employ the faradic current, for the establishment of electro-massage. As these instruments materially limit the finger's sense of touch, I have had made an instrument which allows the application of the faradic current while maintaining fine sensibility of the finger. Massage must always be followed by washing of the anterior and posterior urethra, to thoroughly remove the expressed secretion, some of which often enters the bladder. The solution used for such irrigation must vary in accordance with the microscopical findings. If gonococci be present, the use of silver preparations will be advisable; I deem protagol the most preferable of these. If other bacteria be found, mild solutions of corrosive sublimate are used for irrigation. If the secretion be aseptic, astringent solutions are employed.

The mechanical treatment is reinforced by medicinal therapy. In this it is advisable to employ the drugs in watery solutions injected into the rectum. The diet must be regulated, hot baths employed and heat must be directly applied to the prostate. I have devised an apparatus for this purpose which is made for me by L. & H. Lohnstein of Berlin.

It is of the greatest importance, especially when other bacteria than gonococci are present, to direct attention to thorough asepsis of the lowest division of the intestinal canal. Primarily, as Guyon and his pupils, especially Nogués,[12] have pointed out, treatment must be directed toward the relief of the pelvic congestion. Very acute inflammatory processes in the prostate which tend to rapid abscess-formation present an absolute contraindication to any local treatment. I also deem it positively injurious to perform massage when there is an elevation of temperature; in such cases complete rest in bed is necessary. Otherwise, however, properly performed massage can never injure the patient. On the contrary, one acquires the impression that massage and washing at the proper time prevent further complications. In the 651 cases of gonorrhea before mentioned, epididymitis occurred in the course of treatment in 2½ per cent. of the cases.

In view of the frequency of gonorrheal prostatitis, in view of the great danger of further complications which may result therefrom, and, finally, in view of the great difficulties which so often impede treatment, all therapeutic procedures must primarily be directed to the avoidance of invasion of the prostatic ducts by the gonorrheal process. This is possible in all cases which come under treatment while the infection is fresh and has not preceded beyond the anterior division of the urethra.

Aside from successful prophylaxis of gonorrhea, the possibility of which I showed in a paper two years ago,[13] I submit a species of abortive treatment for cases of gonorrhea which come under treatment soon after infection. My colleague Levin and I have used it for several months. After the microscopical diagnosis is made, the patient is ordered to urinate. If the second urine be clear, the anterior urethra is gently irrigated with a ¼ per cent. solution of protargol until the solution flows off clear. If the patient be hypersensitive the urethra is cocoainized with a weak solution (1 to 200), to which some protargol is added as a precautionary measure. Then, closely following Janet's directions, a copious irrigation is applied to both urethræ with the same protargol solution. The fluid is allowed to enter the bladder until the patient experiences a desire to urinate; this requires about one-fourth to one-half a liter. The patient then empties his bladder. This procedure is repeated on the two following days.

After the first twenty-four hours have elapsed the discharge, which was purulent and abundant, has become sparse and serous and in most cases gonococci cannot be found. Leucocytes disappear in a similar manner and the specimen shows only an abundance of epithelia and fibrin. If, however, gonococci persist to the third day, it shows that the disease has not been aborted. The cause of the failure is that the prostate was already infected, or that para-urethral passages exist in which gonococci are beyond the reach of treatment, or deformities of the urethral mucosa, folds, or valves may be the cause of the failure. In the latter cases slight surgical intervention brings immediate relief.

I have treated 60 cases in this manner. In 27 of these (45 per cent.) the success was positive, *i.e.*, after three washings, and in three after one single washing the gonococci definitely disappeared, despite many provocatory irrigations. I kept nearly all these patients under observation for weeks and months. In 26 of these cases gonococci persisted after three days' treatment. Three of these had para-urethral passages infected with gonococci. After incision of these by means of Janet's trajectome,[14] two or three washings sufficed to cause the definite disappearance of the gonococci. Two cases had congenital valves and plications with very narrow meati. On removal of the impediments the cases proceeded like those just described. Although 21 cases had clear second urine, it was evident that the prostate was infected and I have sufficient reason to assume that this infection was present before beginning the abortive treatment. Of the dispensary cases 7 remained away from observation. Some of these returned to report themselves cured, but as they were not subjected to careful observation I do not consider them among the positive results.

At all events, these facts prove that in a large number of cases rapid disappearance of the gonococci can be secured by the abortive method described, especially when the patient comes under treatment early. Moreover, this treatment has in no instance proved injurious. This rapid disappearance of the gonococci causes avoidance of the extension of the disease to the prostate and deeper lesions of the urethral mucosa.

In most cases in which the prostate was infected by gonorrhea, manifold anatomical lesions of the urethral mucosa existed. After the urethra and its adnexa have become aseptic, these anatomical lesions must be precisely determined by the aid of the endoscope, the exploratory sound and rectal palpation. Especially must Janet's[5] very proper demand be emphasized that adequate mechanical and chemical treatment be directed to the cure of these aseptic lesions. The chemical and instrumental treatment directed to this end has the additional great advantage that it brings to the surface bacteria hidden in the deeper layers of the tissues and the prostatic ducts. Those bacteria which are enveloped in round-cell infiltrations then become mobile and accessible to treatment. It has the further advantage that the recurrences take place *before* the patient has been dismissed as cured.

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PROSTATIC HYPERTROPHY.[1]

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Failure of recognition by both patient and physician of the signs of this affliction, due to the insidiousness of their onset, renders the condidition more or less grave; nevertheless the patient is conscious of the fact that he is called upon to void his urine more frequently than usual and that he rises twice or more times during the night, succeeds in passing only a small quantity at a time, but is mentally satisfied that he has entirely emptied the bladder at each effort. Being familiar with these symptoms, he attributes these signs to an inflammatory condition. The higher level of the urethral orifice prevents the complete evacuation of the contained urine, leaving in the beginning an amount of residual urine of two or four ounces in the early stages of the disease; as the symptoms increase and the difficulty becomes more marked, the bladder becomes distended frequently to its fullest capacity and, instead of a desire to void, the patient finds a constant dribbling of urine, which is nothing more than the overflow from a greatly distended and damaged viscus. Hemorrhage may in some cases be an additional evidence of this change. The distention of the bladder forms a tumor above the pubis, reaching sometimes to the umbilicus, and if a digital examination be made per rectum, the prostate can be readily outlined and its size determined at least approximately, as the lateral lobes in my experience are always involved and the signs of enlargement are present in the entire gland, not being confined to a single portion. It must not be understood that this is true to an equal extent of all parts, the difference being one of degree and direction. A gland may be so enormously enlarged that it interferes with defecation without any effect on urination; these are the cases in which the enlargement is in the direction of the rectum. When the enlargement extends toward the fundus of the bladder, beginning at the margin of the bladder and the urethra, the direction is upward and backward, carrying the posterior urethral extremity with it.

Tumors are distinct areas of growth and may appear in the gland as adenomata and, like the gland itself, may grow in any direction and produce distortion and loss of function. While these symptoms are present (most of them) in all cases, they are not typical in every case. The majority of the cases of this affliction do not result seriously, although occurring in those past middle life. In many persons the age should not be computed in years, but by the actual condition of the patient, particularly the circulatory system. The symptom of arteriosclerosis should always be elicited if present on account of its important bearing upon the prognosis. The loss of muscular power should always be carefully determined for the same reason, for upon this symptom frequently hinge the chances of infection. A hopelessly-damaged bladder with atheromatous blood-vessels is usually indicative of a long-standing disease and, if infected, another complication is added which may belong to other afflictions not connected with prostatic hypertrophy. Systemic evidences of infection are inconsistent with a healthy mucous membrane of this organ.

Diagnosis.—When stricture is absent in a case of the prostatic age, the catheter will usually clear up all doubts and remove the residual urine, which is one of the strongest proofs of the existence of prostatic trouble. Rectal examination should not be omitted, as by this method information is elicited of a definite character concerning both lateral lobes, the median not being accessible by this method. The residual urine is of the greatest importance and the amount should be accurately measured. The amount of residual urine gives a hint, as to the condition not only of the prostate, but also of the bladder, the quantity increasing when the bladder is weak and the muscles have lost their contractile force. It also shows the chemical changes the fluid has undergone, which is a matter of great importance.

Retention or difficulty in urinating is experienced in many cases of moderate hypertrophy, depending upon the preponderance of enlargement of the urethral portion of the lateral lobes, as well as of the median, the latter raising the urethral level markedly. The relaxed, diseased and sagging bladder, frequently almost completely enervated on account of long retention or a diseased condition of the blood-vessels and muscular fibers, should not be overlooked. All sudden stoppages of urine should not be attributed to an enlarged prostate. Tumors of the bladder or fibrous degeneration, causing acute flexion of the urethra in the one and loss of contractile force in the other, may produce the same symptoms as an enlarged prostate, even though atrophy of that gland has taken place. Acute inflammation and ulceration of the posterior portion of the urethral canal should never be lost sight of in our efforts at diagnosis.

The symptoms being so variable and in some instances entirely lacking, it is well to bear in mind a few of the most prominent signs, and if they are absent other causes must be looked for. Anatomically considered, or in the non-enlarged prostate, we can safely eliminate the middle lobe; and Socin's position in combating the statement that the middle lobe is the most frequently enlarged is entirely correct. The deception in regard to the third lobe arises from the fact that most hypertrophies are unsymmetrical and that portion directed toward the bladder rises in that direction and is felt as a projection at the posterior portion of the neck of the bladder. The relaxation and sagging of the posterior wall exaggerate the apparent rise of the urethral opening. Exceptional cases are observed in which there is a nodular growth of the prostatic urethra which produces a tortuous canal and makes catheterization difficult, leading to the impression that there is a stricture of the urethra. In these cases a metal catheter combined with a rectal examination is of the greatest value, as the growths compressing the urethra are situated just within the anus. The exact condition within the unopened bladder can be determined only by the use of the cystoscope, but in the worst cases the introduction of this instrument is attended with great difficulty and, not being within the reach of all, its use is not as common as it should be.

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[1] Read before the Western Surgical & Gynecological Society, Dec. 19, 1901.

Prognosis.—The prognosis depends upon early diagnosis and prompt treatment. In the majority of the cases it may be said to be good, at least under surgical treatment, though not under medical treatment. I know of no drug or combination of drugs that can be relied upon to produce a diminution of the enlarged gland except in cases of simple inflammation. Manufacturing chemists have lauded sanmetto, ichthyol and other substances, but in my experience they are absolutely worthless; indeed it is difficult to perceive how any drug can influence a senile enlargement any more than a senile atrophy.

Massage.—Massage I believe to be of no use whatever and when it has been considered helpful I think that the diagnosis was at fault. If the increased deposit of tissue could be removed by this method, it would certainly be necessary to apply it to the entire circumference of the gland and not to one-third, which is probably all that can be attacked successfully. Aspiration is a temporary procedure which may be resorted to for the purpose of immediate relief of the symptoms and allows time for the preparation of the patient for the instalment of more radical measures or for the adoption of this plan permanently. It is claimed that tubes of a suitable shape, when worn for a long time, produce good results. The method is unscientific and extremely troublesome, and in no case have I seen any real benefit result.

Catheterization in a fair percentage of cases is successful for the purpose of evacuating the urine and keeping the bladder from becoming distended. The greatest objection to this method, aside from being troublesome to the patient, is the almost certain one of infection. There are few persons who can be depended upon to observe a rigid asepsis for any considerable length of time in these cases; besides, a catheter-life is a life of doubtful value in most cases. It has little if any beneficial effect upon the gland, but when it can be used and in the hands of those who are fortunate enough to escape infection, it is far preferable to continued aspiration or permanent drainage. But in these days of asepsis and improvement in surgical technic, it seems like a lack of courage on the part of the surgeon to recommend catherization to a patient who is too old to comprehend the dangers of it, and who is usually unable physically and mentally to carry out an asepsis rigidly enough to insure his own protection.

Dilatation aims to preserve a channel for the voluntary discharge of the urine, *per vias naturales,* and is of greater value and less dangerous than any of the aforementioned procedures, for the reason that it is or should always be done by the surgeon himself, thereby insuring against infection and traumatism. When properly performed it causes a yielding of the tissues already formed and if instituted early enough prevents the encroachment of new deposits in the immediate vicinity of the urethra. It will give the best results, however, in incipient cases, and the catheter should be used frequently in order to ascertain whether the patient is emptying the bladder completely. Perhaps more favorable results would be obtained by this method if patients could be made to understand the necessity for frequent séances and their longer continuance.

Cystotomy.—This measure is also a temporary or procrastinating procedure, and aside from furnishing relief of a transient nature, produces its best results in cases in which the bladder is infected or in which cystitis is present as a complication; it also affords a means of examination of the interior of the bladder and enables the surgeon to determine whether the cause of the obstruction is in the bladder, at the junction of the urethra and the bladder, or along the prostatic portion of the urethra, and whether there is a distinct enlargement of the so-called middle lobe, compression from pressure of the lateral nodular or unsymmetrical enlargement of the lateral lobes, or a sagging, toneless bladder; and, if inflammation be present, it permits rest by the rapid escape of the urine as well as by affording an opportunity of cleansing thoroughly the entire affected area. It also allows an opportunity for operation under the guidance of the eye and permits the pushing down of the gland by the finger in enucleation.

In the consideration of all of the methods just described none are intended to be radical, none are calculated to remove the cause; all are, however, intended to restore, partially at least, functional activity and to produce results sufficiently satisfactory to prevent the necessity of more radical procedures; until within the last five years they were the best that the profession possessed.

Dissatisfaction with them is clearly shown by the constant aim to discover something capable of giving better results. In a few cases they have served the purpose well and in the future will be resorted to in a very few selected cases; but the better knowledge of the anatomy of the prostatic gland and its pathology calls for an advance in our therapeutic resources that does something more than secure relief with a constant menace to the life of our patients, through infection, as well as a method that does not require eternal vigilance, and a knowledge of the fact that the life of the individual depends upon the careful regulation of the mechanics of artificial urination.

MEDICAL PROGRESS.

PEDIATRICS.

Congenital Heart Disease.—In the necropsy of a child which had had periodical attacks of cyanosis, R. C. Rosenberger (Archives of Pediatrics, Mch., 1902) found in an interventricular septum deficient at the base a small opening at the foramen ovale, pulmonary stenosis, and a malposition in the origin of the aorta. At the base of the interventricular septum a triangular area known as the "undefended space" is found, and this is the most common site of defect in the septum. A few such cases have occurred as a result of postnatal endocarditis, but in this case the associated lesions, and the smooth edges of the opening free from any thickening of deposits of fibrin, determine its congenital nature.

Gangrenous Lymphangitis of the Scrotum in the Newborn.—Two cases of gangrene of the scrotum are described by R. Lacasse (Gaz. Hebdom. de Méd. et de Chir., Feb. 16, 1902). In both of Lacasse's cases the infants were of normal birth and nourished with mother's milk. General or predisposing causes for the gangrene were lacking. In one instance a local point of infection probably existed at the umbilicus, where a suppurating wound existed for several days after the cord separated. The rapidity of the development of the gangrene is striking. In one case the first inflammatory symptoms were noticed on September 2d; on September 7th an extensive scrotal ulcer was present; in the second case the scrotum was almost entirely destroyed in ten days from the onset of the illness. The constitutional phenomena accompanying the local process were marked, but less pronounced than in erysipelas, with which the scrotal inflammation in its early stages might be confounded. Treatment must be prompt and radical. Broca uses the thermocautery and has reported several cases of recovery.

Infantile Cirrhosis.—Cirrhosis of the liver in a child would indicate that the child's tissues are senile in spite of youthful age. F. X. Walls (Pediatrics, Mch. 15, 1902) finds it a very rare disease in children and in summing up the causes finds that alcohol is responsible for less than 20 per cent. of recorded cases, syphilis for about 10 per cent., and tuberculosis in a relatively frequent number. Hereditary syphilis has its seat of election in the liver, this organ becoming uniformly hard and flint-like. The gummatous form with secondary shrinking is rare. Heart disease and chronic sepsis are occasional predisposing factors. Thompson found cirrhosis to follow obliteration of the bile-ducts in the newborn. In cirrhosis the general development is retarded, the child small and puny for its age and emaciated. The symptoms are those of the disease in the adult. Venous stigmata on face or body are common. Chronic peritonitis has a similar symptomatology, but hepatic cirrhosis could be diagnosed if one can demonstrate a large liver, large spleen, icterus, suggillations of the skin, hemorrhages from mouth or intestinal tract, and free fluid in the peritoneal cavity. The course is rather rapid. Death results from toxemia, exhaustion, hemorrhage, or a terminal inflammation of serous membranes. Therapy is hopeless, though some good may be done by milk diet, Carlsbad water, and inunctions of gray salve.

Examination of Breast-Milk.—A method which can be employed in general practice and, although more easily done than a chemical analysis, serves an equal purpose, is recommended by Friedmann (Deut. med. Woch., Jan. 23, 1902). It consists of determining by microscopical examination the number and character of the milk corpuscles. It is an advantage first to become familiar with the normal conditions by repeated examinations of the milk from healthy mothers, those whose children are well and show no signs of rickets or glandular enlargements. The milk corpuscles can be divided as to size into three groups, large, small, and intermediate, of which the latter are most numerous. The small ones are also found in almost equal numbers, but the large ones are comparatively scarce, a magnification of 400 diameters, showing only about 10-20 in the field. If these be more numerous the milk is found to be too fatty and more difficult to digest. A preponderance of the small corpuscles usually means a chronic dyspepsia for the nursing infant. An accurate count can be made with some form of blood-counting apparatus, but the latter is not essential. The proximity of the corpuscles to each other also serves as a guide to the grade of the milk, the more sparely distributed the globules and the greater the number of the small ones, the poorer the quality of the milk. The method also serves to differentiate the character of the milk from the two breasts. In the selection of wet-nurses it is obviously useful.

Epidemic of Uncertain Nature.—Eighty-two children at the New York Foundling Hospital were noticed by R. G. Freeman (Archives of Pediatrics, Feb., 1902) to become drowsy, lose appetite, and complain of headache. All of them had fever, two had marked chills, and two chilly sensations. Other symptoms were vomiting, abdominal pain and flushing of the face. None had enlarged spleen, loose bowels or the redness of the tongue and pharnyx ordinarily associated with gastro-enteric disorder. After attention to the bowels, milk diet and rest in bed some of the children improved, but in none was there subsidence of the fever. The blood was studied for plasmodium in seven cases with negative results, but later a boy who had two chills three days apart was found to have plasmodium malariæ in his blood. At once two grains of quinine, every three or four hours, was administered to all with complete subsidence of the temperature within twenty-four hours in most of the cases. Some were treated with two grains of quinine a day without amelioration, but with rapid recovery from six grains a day. In favor of a gastro-enteric condition were the coated tongues, headache, vomiting and constipation (in some cases); but against this were the absence of red tongues or pharynges, tympanites, dilated stomachs, or diarrhœa, and the fact that none of them recovered when the bowels were regulated. Many authorities report the marked susceptibility of children to malaria, and these cases resembled the early stage of experimental malaria before enlargement of spleen, presence of plasmodium, and the typical temperature.

PATHOLOGY AND BACTERIOLOGY.

Drugs and Immunity to Anthrax.—Certainly a very fertile field of research is that which will throw light on the effect of the administration of drugs in either increasing or counteracting the natural immunity of animals to the various infectious diseases. The discovery of drugs that increase immunity will be of paramount value in practical medicine. A contribution that indicates the future possibilities of this study, though not of immediate practical importance, is that furnished by Cadéac (Jour. de Phys. et de Path. Générale, Jan. 15, 1902). Experimenting with various drugs, he found that corrosive sublimate is the best agent to suppress the resistance or immunity of most dogs with respect to anthrax. The successive injection of strong doses of the virus, together with non-toxic doses of corrosive sublimate, increases the susceptibility of the dogs to anthrax to such an extent that the animals quickly succumb to the disease. Venous stasis produced by the application of a ligature about the neck or to the extremities aggravates slightly the degree of infection, provided that the duration of the obstruction to the circulation does not exceed six hours. Prolonged constriction for eight or ten hours produces a local gangrene which is essentially preventive of the production of the disease by successive inoculation.

On Bacteriolysis and Hemolysis.—A critical review of the latest contributions to these subjects, as well as the valuable results of his own original researches, are presented by Max Gruber (Jour. of State Medicine, Jan. and Feb., 1902). The so-called "antibodies" known to exist in blood-sera are of value in the following practical applications: They are important in the neutralization of bacterial poisons; they are instrumental in the destruction of the bacteria themselves; they dissolve blood-corpuscles taken from another animal; they cause the coagulation of milk from another animal; they are employed in the treatment of plague, diphtheria and snake-bites; they cause the agglutination reaction; they enable one to discriminate between the various albumins; they are of value in the recognition of human blood-spots in criminal cases by means of the precipitation of specific albuminous bodies and the destruction of the red blood-corpuscles respectively. Of highest importance, therefore, is a knowledge of the properties of these "antibodies," and the conditions under which they exist. Normal blood-sera removed from animals have a marked bactericidal property. This they lose entirely if heated to 55° C., or even if kept for a few days. Normal sera have no specific bactericidal action; they manifest their antagonism against different kinds of susceptible bacteria to approximately the same degree. Only when sera are immunized do they act specifically against some particular bacterium. Fraenkel and Loberheim have recently shown that a serum which has lost its bactericidal power by standing or heating, when injected into an animal confers passive immunity, *i. e.*, the blood of the animal exhibits the same specific bactericidal power as the immune serum when fresh. It has been supposed that the inactive serum contains a body known as "lysogen," which when injected into the living body is converted into a lysin, just as zymogen is converted into an enzyme, as is the case with the digestive ferments. There is a theory that active immune sera contain two bodies, lysogen and lysin. The latter is easily destroyed by standing and heating; when injected into the living body the former is transformed into lysin. Moreover, it is possible to bring about this same transformation *in vitro*, by adding a small quantity of fresh and in itself immune serum to the inactive serum in a test-tube, showing that the reaction is not necessarily a vital but purely a chemical one. Inactive sera are capable of producing the agglutination reaction. According to the author, this process is caused by the membranes of the bacteria and their flagella when present, becoming sticky. This results from certain constituents of the membranes uniting with certain substances of the sera, the so-called "agglutinates." That the membranes only are affected is shown by the fact that the agglutins do not at all hurt the bacteria, for these grow and multiply nearly to the same extent as they do if not agglutinated. Inactive immune sera can be used for diagnostic purposes in another way, namely, they can cause precipitation of a specific character in the clear filtrates of the relative bacteria. The bacteriolytic power of a serum is quantitatively limited, for only a definite number of bacteria can be destroyed by a definite serum, and serum which has once been used to destroy bacteria has lost its bactericidal property. An immune serum entirely loses its specific properties if left with a sufficiently large number of the respective bacteria for a sufficient length of time; the specific immunizing substances and antibodies are apparently used up or locked during the reaction. Acording to Buchner, bacteriolysis is to be attributed to "alexins," which are very unstable bodies in the blood of immune animals. This theory is denied by Fisher and Von Baumgarten who hold that the death of bacteria is due to deficiencies of suitable food, osmotic changes, plasmolysis and plasmoptysis. Plasmoptysis is an excess of osmotic pressure inside the cell, causing an expulsion of its constituents. Von Baumgarten thought that osmosis causes killing of the bacteria by a change of salt concentration. The alexins are not to be reckoned among the digestive ferments; bacteriolysis and hemolysis are not enzymotic processes. The alexins have in common with the enzymes only these characteristics, namely, they are unstable and are easily destroyed by heat. The alexins differ from the enzymes in that the former are very sharply and closely limited in their action according to their quantity. Experiment forces the author to asume that the antibodies and alexins cause alterations in the membranes and supporting stroma of the different cells, in other words, alterations in the osmotic diaphragm by virtue of which the latter allows substances to pass through which it prevents doing in its normal state. The power of the blood of an animal to destroy red-blood cells, spermatozoa, leucocytes, epithelia, endothelia and nerve-cells of another animal. was shown by Buchner to be closely conected with bacteriolysis, for the former as well as the latter power is lost by allowing the serum to stand for a time or by heating it. The globulosides also get used up just like the alexins. The complicated character of the conditions surrounding the action of the blood-serum is further shown by the fact that in an immunization of an animal by means of the bacterial injections, side by side with the specific substances which protect the animal, there are formed, although in small amount, substances which protect the bacteria themselves, the so-called "anti-alexins."

Eosinophile-Count in the Diagnosis of Human Blood.—The home of the eosinophile is probably in the bones or glands and its normal percentage with reference to the other leucocytes is from ¼ to 4 per cent. An increase in the percentage is found in diseases of the bone, skin and genito-urinary system, in parasitic conditions of the intestine, in malignant tumors, in asthma and after the use of certain drugs, such as camphor or antipyrin. The blood of animals has been said to contain a relative large number of these cells, but O. S. Wightman (N. Y. Med. Jour., Mch. 1, 1902) has recently examined specimens of blood from the horse, rat, rabbit, calf, goat and other animals and finds that the number of eosinophile leucocytes ranges from 1 to 8 per cent., and is in no way constantly high enough to be characteristic. These animals do have, however, a persistently high lymphocyte-count corresponding fairly well with the polynuclear count of human blood.

Placental Transplantation and Its Results.—The fact that the maternal blood circulates in the uterine sinuses in direct contact with the placental substance suggests the possibility that from time to time parts of the placenta may be carried away in such a manner that they themselves produce changes in the mother's blood, and that the blood of the fetus circulates directly with that of the mother. R. Scholten and J. Veit, (Ctblt. f. Gyn., Feb. 15, 1902), in order to determine whether such an accident might influence the mother, performed a number of experiments from which they deduced the following conclusions: The blood serum from rabbits in which from 5 to 10 grams of human placenta had been transplanted into the abdominal cavity had no hemolytic influence on the human blood stronger than the blood serum of rabbits which had not been treated in the same way. The blood serum of pregnant women showed, as a rule, no hemolytic peculiarities upon the blood of men and of women who were either pregnant or not pregnant. Exceptionally without its being possible to fix the reason definitely there was a very slight hemolytic effect of the serum from the pregnant upon the blood of the non-pregnant woman. The serum of rabbits which had been treated with human placenta was not poisonous for other rabbits. The serum from two eclamptic women showed no hemolytic peculiarities for the blood of men or of women who were pregnant or not pregnant and was in large quantities not poisonous for rabbits. The urine of rabbits which had been treated with human placenta or rabbits' placenta showed after twenty-four or forty-eight hours a definite amount of albumin. Bits of human placenta which were laid directly in the fresh serum of rabbits which had been treated with the human placenta for twenty-four hours showed a marked effect upon the syncytium. This result was greater than was obtained from the bits of placenta which had laid in ordinary rabbits' serum.

Value of Stock's Reaction.—Recently A. Stock published a new reaction for acetone in urine, the chief advantage of which was that it was not influenced by alcohol, aldehyde or similar bodies. It necessitated the addition of 10-per-cent. hydroxylamin hydrochlorate solution and the same amount of 5-per-cent. caustic soda and pyridine to 10 cubic centimeters of the fluid to be examined, which should be neutral. A layer of ether is then allowed to flow in and sufficient bromine water is added to give the ether a distinct yellow color on shaking. If to the fluid there be now added one cubic centimeter of peroxide of hydrogen, the yellow color of the ether will turn blue in the presence of acetone. H. Zickler (Präg. med. Woch., Mch. 6, 1902) finds that the test, while it possesses the advantage mentioned, is not sufficiently delicate to be of clinical value, for it is positive only with 0.02 grain of acetone in 10 cubic centimeters of urine.

Implantation of Tubercle Bacilli.—The conclusions which may be drawn from present knowledge of this subject are summarized by L. F. Flick (*Phil. Med. Jour.*, Mch. 22, 1902) as follows: (1) The seed supply for new implantations of tuberculosis is derived almost entirely from human sources, especially the sputum of consumptives. (2) It can be derived from animal sources. (3) The tubercle bacillus enters a host through the lymphatic system in the alimentary canal, the respiratory tract, and the skin. (4) It is conveyed to its destination by the lymph- and blood-currents. (5) The place of deposit is no indication of the port of entry except when deposit has taken place in the bronchial or mesenteric lymphatic glands. (6) Interference with the circulation of a part, whether by traumatism, inflammation, or vasomotor disturbance, prepares the part for tuberculous deposit. (7) Germination and colonization do not always follow tuberculous deposit.

Increase of Cancer in Germany.—A statistical study which ought to prove of interest when compared with like conditions in this country has been made by Wutzdorff (Deut. med. Woch., Mch. 6, 1902). He finds on investigation of the vital statistics of the Empire, a marked general increase during the years 1892-1898 of deaths from malignant new growths. In fact, the increase in the number of cancer cases has been greater in proportion than the rate of growth of the population. That cancer is associated with middle or advancing life only is not borne out by these figures, which indicate an earlier involvement than was formerly known. Women appear to be the subject of cancerous diseases more often than men, but the increase in the number affected seems to advance more rapidly among the latter than in the former.

Parasites of Carcinoma and Sarcoma.—Whatever the attitude of the profession may be, however hostile or inimical to this much-discussed theory, no one can read the article by Max Schüller (Ctblt. f. Chirurgie, Feb. 22, 1902) without being amused. He is concerned, as, indeed, are most of the gentlemen who sponsor the parasitic theory of these neoplasms, rather with an inference of previously uttered virus than with the presentation of facts which should disarm his opponents. In his recent work, entitled "Parasites in Carcinoma and Sarcoma of Man," he described certain "giant capsules and meshwork" which were pictured as probable varieties in the life-cycle of the parasite. From Heidelberg arose the cry that these cells were nothing more or less than cork cells which had crept unawares into the cultures. Inasmuch, however, as all bottles were closed with rubber or glass stoppers it is not possible that this contamination could have occurred. It is, however, interesting to note the strange resemblance between certain phases of the parasite and cork cells. A close study of microphotographs will, however, show a considerable morphological variation and there exists a chemical reaction in the one which is absent in the other. These "great capsules" are by no means the direct cause of cancer. They are a sort of nidus for the round or oval bodies which develop within them, and finally burst out, leaving the capsule free to fall easily from the preparation. At once these oval bodies find their way between the cells, or into them, and produce the well-known malignant forms. As they grow there is either a development into "great capsules" or a reproduction by division. Stained with a preparation of thionin, no one could possibly confuse these young organisms with plasma cells, for which Ribbert has suggested they might be mistaken; they are easily traced, not alone *into* the cells, but along the so-called invasion paths of the neoplasm. The proposition of Nils Sjobring that the so-called young forms were merely leucin particles has been disproved by Clewes of the Buffalo Cancer Labratory, as well as by the author, who has not alone seen distinct motions and contractions in them, but has studied their relation to alcohol, heat and other factors. There is but one conclusion possible, viz., that the bodies are living and that they are the direct cause of neoplastic growth.

A New Trypanosoma.—Diseases among cattle have a definite relation to public health. D. Bruce (Lancet, Mch. 8, 1902) reports a new species of trypanosoma discovered in South Africa. This new species can be distinguished from the trypanosoma of surra, of tse-tse fly disease or of the rat by its large size, which is almost double that of any of the others. In general appearance it conforms closely to them in possessing an oval protoplasmic body, a longitudinal finlike membrane and a single flagellum. This new trypanosoma was lately discovered at Pretoria by A. Theiler, who found that it infects only cattle, while horses, dogs, goats, rabbits and guinea-pigs are immune, showing neither symptoms nor the parasites in the blood. Calves, on the other hand, were easily affected, showing fever and numbers of the parasites in the blood. He first found it in the blood of a young ox just recovered from rinderpest. Among cattle the disease seems to be an acute, pernicious anemia, with grave blood changes, general anemia without deformation of the elements of the blood, or lastly only a slight fever. There exists a natural immunity in cattle against this disease. He is of the opinion that this disease is the same as that attributed by Kolle to bovine malaria. Kolle overlooked the trypanosoma, saw that the disease was infectious and observed endoglobular parasites and pigment in the red blood-cells. The name proposed by Bruce for this interesting organism is in honor of its discoverer, Trypanosoma Theileri.

The Nature of Streptococcus Toxin.—An additional contribution to the study of the toxins of streptococci is made by A. Marmorek (Berl. klin. Woch., Mch. 24, 1902). Marmorek's studies make it appear that all varieties of streptococci produce essentially the same toxin. The latter belongs to the group of diastases which are decomposed by a temperature of 70° F. A serum which affords protection against the toxins of every variety of streptococcus can be developed in animals with the aid of a single streptococcus culture. In the course of his investigations Marmorek produced a toxin which in doses of 0.25 cubic centimeters proved fatal to puppies.

The Etiology of Carcinoma.—A new contribution to the theories which have been formulated regarding the causes of cancerous growths, is advanced by Feinberg (Deut. med. Woch., Mch. 13, 1902). A histological examination of carcinomata in an early stage of growth shows the presence of three classes of cellular elements: (1) Polymorphous cells, containing nuclei of varying sizes and shapes; (2) cells with distinct karyokinetic figures; (3) independent of these, certain vacuoles which even with intense staining seem to be entirely empty. The author believes that the latter are specialized organisms and independent of the system. Their characteristic elements are a double enclosing membrane which is stained deeply by orange G, a nucleolus staining readily and surrounded by a clear, unstained zone, and the latter enclosed in a lightly stained plasma with faint radiations. These properties seem to fix the structures as unicellular organisms, probably belonging to the Sporozoa. They were demonstrated in six cases of carcinoma, three of the breast, two of the intestinal canal, one of the rectum, and attention is directed to the necessity of securing fresh material from early cases. The author suggests, moreover, that the vacuolar condition as found is merely an encysted form of the organism, a protection against the onslaughts of the normal cells. The tumor can be considered the result of cell changes and multiplication brought on by the irritant influence of the intruding organism. It may also be feasible to employ this means of identification in the diagnosis of early and doubtful cases of carcinoma.

Generalized Cutaneous Melanotic Tumors.—In May, 1898, a sarcoma was removed from a man's subhyoid region; to the naked eye, it appeared free from pigment; it was not examined microscopically. A few pigmented spots were at this time observed on the skin, but nothing was thought of them. In November, 1900, the skin presented numerous black sarcomatous nodules and a large melanotic sarcoma was removed from the subhyoid region. In August, 1901, he entered a hospital and remained under the observation of E. Sergent (Archives générales de Médecine, Feb., 1902) for three months. He was well nourished, looked the picture of health, and had no visceral manifestations. His skin bore innumerable pigmented nodules in every region and new nodules appeared every day. They varied from the size of a pin-head to that of a small nut, the fully-developed superficial nodules being black as ink, while the deeper nodules, owing to the overlying layers of skin, were gray or blue. They were all sessile with broad base, and mostly looked like a split pea. Some were surrounded by a zone of inflammation, and others were ulcerated and exuded more or less pigmented or bloody liquid. There were some pigmented cicatrices from healed ulcerated nodules. The evolution of the nodules as observed was as follows: A slight elevation of the skin was followed by thinning of the epidermis and the appearance of a gray coloration. This spread rapidly and soon became a deep black hemispheric nodule covered with a thin lamella of epidermis. Sooner or later its growth stopped, and it either remained stationary or without any sign of inflammation rapidly disappeared, leaving a permanent pigmented area, or became surrounded by an inflammatory zone, ulcerated, broke down, and was replaced by a slowly-fading pigmented cicatrix. The blood of this man showed a moderate diminution in the number of red cells, a normal number of leucocytes with a slightly increased proportion of polynuclears, and large, poorly-stained, vacuolated white cells with pale nucleus, showing plasmolysis and karyolysis. Such cells are often found in septicemic states. In the fresh specimen refractile pigment granules were seen in the leucocytes, and in a few of the erythrocytes, but in the stained specimen pigment could not be detected. There was no melanuria. The pigment was non-ferruginous, and appeared to be generated directly by the cells of which it forms an integral part. Melanotic sarcoma usually arises from the eye or the skin, but occasionally from a lymph-node. The distinction from carcinoma is often obscure. Melanemia would indicate a generalized involvement, in which case surgical intervention would be of little use. The absence of melanemia, however, is not proof of non-generalization.

The Pancreas and Tuberculosis.—The lesions produced by the action of the tubercle bacillus upon the pancreas and the influence of the latter upon the bacillus have been studied by F. E. Italia (La Riforma Medica, Mch. 8, 9, and 10, 1902). Through inoculation of animals with tuberculous material it was found that the pancreas reacts to the toxins of the tubercle bacillus by hyperplasia of the connective tissue, with subsequent contraction of the organ. The fact that the bacillus was not found in a number of pancreatic specimens infected with tuberculosis led to the belief that the cells and their secretion had a specific action against the bacillus. To determine the truth of this theory and the possible value of pancreatic infusions in the therapeusis of tuberculosis, a further series of experiments was carried out, with the following findings: (1) Through the simultaneous inoculation of tuberculous material and pancreatic infusion in guinea-pigs and rabbits, it has been demonstrated that the latter has an inhibitory influence upon the development of the tubercle bacillus as demonstrated by control experiments with the tuberculous material alone. (2) If the tuberculous infection be already generalized, pancreatic infusion has no effect. (3) If the experimental specific lesion be still localized, pancreatic infusion is curative in its effect upon the specific focus, and excites to a marked degree migration of phagocytes. (4) If concentrated infusions be used, there is pronounced reaction of the tissues at the site of injection with tendency to sclerosis; from dilute solutions, reaction is slight or absent. (5) Small doses induce increase in body-weight; frequent and large doses cause emaciation. (6) A 2-per-cent. watery solution of pancreatin is more rapid and active in effect than pancreatic infusion. (7) Trypsin causes enormous destruction of tissue at the site of inoculation and, in large doses, death through paralysis of the nervous centers. A limited experience in the administration of pancreatic infusion to human subjects showed less favorable results than in the animal experiments.

NEUROLOGY AND PSYCHIATRY.

Ascending Neuritis and Syringomyelia.—From the standpoint of pathology syringomyelia may be the result of a variety of factors. Among the possible causes is infection following the route of the peripheral nerves. Clinical facts and experiments support the belief that microbes or toxins can reach the spinal cord by this route. A case of syringomyelia following an ascending neuritis is described by P. Marie and P. Guillain (La Presse Méd., Feb., 1902). The patient manifested symptoms of an ascending neuritis for a number of years, the trouble dating from the occurrence of a phlegmon of the hand. Symptoms of syringomyelia supervened.

Gray Hair and Emotion.—Cases of hair turning gray in a night are said to occur, but it is uncommon to meet with well-authenticated cases. R. Jones (Lancet, Mch. 1, 1902) gives the details of the following case in an insane asylum. The man was thin, sparely built, fifty-three years old, five feet eight inches in height, one hundred and forty pounds in weight, clear-complexioned, blue-eyed, intelligent, thoughtful, reserved and a paranoiac. For two or three months before admission he had given way to drink on account of worry and overstrain over his work. His delusions were well marked and rather active. His suspicions were directed against his family and his tendency was both murderous and suicidal. He became violent, noisy, abusive, aggressive, and had to be drugged for his own and his attendants' safety. Upon admission his hair was of dark color, both on the scalp and face. Within the short period of five weeks, it changed first to a gray and then very rapidly to a distinct white. There was no history in his family of any insanity, immediate or remote. The microscopical examination of the hair showed freedom of pigment deposits, and a silvery appearance, thinness of the cuticle, atrophy of the fibrous layer, infiltration with minute air bubbles in the distal third of the hair, and to a less marked degree in the middle third. The medullary portion was smaller and more varicose than usual. The bulbs were small, atrophic, and almost entirely free from the adherent root sheath.

Vasectomy to Prevent Transmission of Insanity and Crime.—In 1850 there was one criminal to each 3,442 of the population, while in 1890 there was one criminal to each 957 of the population. "The law of heredity has been recognized as a most potent force in the development of life as long as history has been written." Among the less civilized, perhaps, strenuous laws have been enacted to prevent the propagation of children by those who were mentally or physically weakened, but sentiment, at the present time, rebels against any attempt to interfere with individual liberty and enjoyment. The astounding increase in crime must, however, soon arouse the people to a sensible discussion of this problem. H. C. Sharp (N. Y. Med. Jour., Mch. 8, 1902) believes that castration will never be a popular method to render these unfortunates sterile, for the operation must not in itself be a punishment to the individual—it must not result in a deformity, neither must it interfere with his enjoyment of life. Castration, furthermore, has a very depressing effect. Severence of the vasa deferentia, however, has been found to be a most efficient means of causing sterility without in any way destroying the sexual power. The author has performed this operation in forty-two cases and is prepared to state positively that it does not impair the sexual power, but that the patient improves mentally and physically, increases in weight and his will power becomes stronger. Lately he has been following the English method of operating, which selects the scrotal region as the site of operation. The vas is clasped between the thumb and index finger, a longitudinal incision is made about three-eighths of an inch in length and the vas is severed. The scrotal wound is not closed. It is strongly urged that this is a method by which a dangerous and hurtful class may be largely diminished in numbers and the race mentally and bodily improved.

Myasthenia Gravis.—This rare nervous affection depends upon several factors. In the following case diabetes appears to have been a very important element, as noted by C. A. Hingston and W. H. B. Stoddart (Lancet, Mch. 15, 1902). The patient was seventy-one years old; a contractor of considerable mental and physical activity, with good health; at sixty years of age retired because easily excited and fatigued and obviously decreased in capacity for business; at sixty-three suffered from neuralgic pains in various parts of his body and limbs; finally from neuralgia limited to the left leg and severe enough to confine him to bed for weeks. The urine at this time was of high specific gravity and rich in sugar, which disappeared under appropriate dietary treatment; for a year before death albumin appeared in the urine and persisted; energy and strength decreased, but no local symptoms appeared until the last seven weeks when he relaxed his diabetic diet and then steadily failed through gradually increased muscular weakness without malaise. He showed the following symptoms: Exhaustion even during dressing; progressive inability to walk; slight bilateral ptosis, increased by reading; dysphagia first for solids, then semisolids and finally liquids, which frequently regurgitated through his nose. Upon examination he appeared well nourished and, when sitting down, in good health except for the ptosis; showed fair coordination, with exhaustion as soon as any movement was repeated a number of times; no atrophy; no loss of electrical irritability; no decrease in sensation; no tremors and no involuntary movements of any kind; normal abdominal and plantar reflexes; exaggerated knee-jerk which exhausted itself on repetition, but not to the point of absolute loss; no ankle-clonus; no ocular palsy; some nystagmus on lateral deviation; no diplopia; bilateral ptosis sufficient to cover half the pupils and increased by reading; normal activity of pupils to light and coordination; normal conjunctival reflexes; no weakness of the muscles of mastication or of the face; full strength of voice after rest but aphonia after a few minutes' conversation; total dysphagia for solids, regurgitation of fluids through the nose at the end of a meal, absence of the pharyngeal reflex; heart and lungs normal except a louder, increased second sound at the aortic valve; arteries normal for old age; full control of bladder and rectum; moderate amount of sugar and albumin in the urine. Death occurred about two weeks later. Unfortunately there was no autopsy but there appears little doubt that the disease was myasthenia gravis or asthenic bulbar paralysis. The unusual features are the patient's age, the acute course of the process and its association with diabetes. All cases previously reported place the age between thirty and forty as usual for the disease. Erb has reported one in a patient fifty-five years old. The only undoubted case of more acute course lived only fourteen days and is recorded by Widal and Marinesco. The influence of diabetes appears to have been great because the severe symptoms appeared as soon as he relaxed his diet. This observation is in favor of the prevalent view that the disease is due to some toxin in the blood affecting the peripheral nerves.

Pathology of Disseminated Sclerosis.—The text-books furnish a large number of theories as to the nature of disseminated sclerosis, but no adequate explanation of its causation has yet been given. Charcot describes this condition as a "primary and multilocular chronic interstitial myelitis or encephalitis." Rundfleish and Marie consider it "of vascular origin, the changes in the blood-vessels being the primary lesion." Adamkiewitz believes it is a primary parenchymatous change due to a toxin," while Strümpell maintains that it is a multiple gliosis. According to A. F. Shoyer, (Jour. of Path. and Bact., Mch., 1902) the distribution of the lesions of disseminated sclerosis can be explained by the assumption that they are caused by a poisonous agent conveyed by the cerebrospinal fluid, which finds entry along the fissure from the central canal and ventricles and along the nerve-roots, also at a point in each lateral margin of the cord. From the examination of sections of the spinal cord of two cases, and also from the illustrations in connection with published cases, the author finds a marked resemblance in the arrangement of the lesions. There are five primary forms of patches related to the following localities, namely, the posterior fissure, the anterior fissure, the central canal, the points of entry and exit of the nerve-roots, and a point in each lateral margin of the cord. Pierre Marie suggests an infectious origin for this condition, typhoid fever being the causative factor in the majority of cases; in twenty-seven cases there was a history of typhoid in eleven. Among the other causes are pneumonia, malaria and the eruptive fevers, especially smallpox. Marie concludes that the condition is a combined infection due to pathogenic organisms which have made their way into the nervous tissues. This theory is improbable, for fresh patches are being continually found, and old ones continue to spread during many years. The condition, according to Shayer, is probably to be attributed to the action of a toxin due to the perverted metabolism of nervous tissues, which toxin is analogous to cholin or neurin, which has been shown by Mott and Halliburton to be produced in the condition of general paralysis.

Paresis.—From a study of one hundred and forty-nine cases occurring at the Philadelphia Hospital, Wm. Pickett (Phil. Med. Jour., Mch. 29, 1902) deduces some interesting clinical and diagnostic features. The old idea that the delusion of grandeur is the essential symptom of paresis seem contraverted by these figures, which show that paresis without delusion is extremely common (44 per cent. of the series). As a matter of diagnosis the author believes that the forms of insanity most often confused with paresis of the simple form are (1) the so-called organic dementias, chiefly those due to embolism, thrombosis, hemorrhage; (2) presenility; (3) dementia præcox; (4) even epilepsy and alcoholic insanity. The prevalence of alcoholism among these patients demands more recognition than was formerly ascribed to it as an etiological factor, and the hasty acceptance of syphilis as the *sine qua non* of paresis needs reservation. As regards the so-called "crucial tests" of true paresis, the author's figures bear out the statement that any abnormality of the pupils not accounted for by a local lesion may serve as a sign of paresis. The consensual reflex was found as an independent sign in only a small number of cases. Attention is also directed to the confirmatory value of the paralytic attacks, the apoplectic form occurring more commonly early in the course of paresis, the epileptiform prevailing later. After these points come, in order of scientific value for diagnosis, (1) tremors of face, lips and tongue, with resultant hesitancy of speech, and (2) impairment of consciousness and of judgment.

Adiposis Dolorosa.—A report of a patient affected to this condition is presented by D. Papi (Gazz. degli Osped., Mch. 9, 1902). Syphilis, rheumatism, trauma, considered by some as influential in the causation of the disease, were absent, previous mental distress alone suggesting its origin. The usual symptoms, increased fatty deposits in successive points accompanied by pain, were observed; an unusual feature, however, was the occurrence of the affection in the face, this together with the hands and feet being usually exempt. A diet of eggs, vegetables and milk, with iodide treatment followed by administration of thyroid extract brought about a cure.

Local Disease as a Cause of Neurasthenia.—The neurasthenic patient is oftentimes made the victim of a specialist who believes that a cure should immediately follow the relief from trouble in his line of work without fully recognizing the important relations between a local cause and the mental equilibrium of the patient. It is natural that any specialist should attach too much importance to his own specialty, believing that the causes of the trouble center around those particular maladies. F. Coggeshall (N. Y. Med. Jour., Mch. 29, 1902) believes that the neurasthenic diathesis may be either inherited or acquired as the result of overtaxing the nervous system by any kind of severe and prolonged strain. For one who has the diathesis a strain may be severe which would not be felt by a normal person. Some give out merely from the wear and tear of ordinary life; others, who could bear the conditions of average lives, break down under the strain of trying occupations; still others reach the point where the addition of a slight but constant irritation resulting from some physical defect proves too great for the nervous system to endure. Some of the more common causes of irritation are dysmenorrhea, dyspareunia, astigmatism, spurs in the nose, an adherent prepuce or adherent clitoris or even an unerupted third molar. He therefore divides neurasthenia, like anemia, into primary and secondary cases and first makes a careful search to find evidence of an hereditary tendency to determine the likelihood of benefit from the removal of extra fatigue. He then searches for sources of removable strain and removes these local irritations as completely as possible. Leastly, one should never rest satisfied with the local treatment but should build up the nervous system, depending upon drugs and more especially upon massage, gymnastics, hydrotherapy, some electricity, a great deal of informal suggestion and in some cases hypnotism.

Education of Epileptics.—These unfortunates were up to a few years ago, even in highly civilized nations, helpless and virtually outcast. The Craig Colony at Sonyea, N. Y., has been an important factor in teaching us how to advance their interests. In Great Britain twelve years ago a similar home for epileptics was started at Maghull. A brief note of the work of the home is given by W. Alexander (Lancet, Mch. 22, 1902). He calls the home the first step in improving the position and comfort of epileptics. Prior to its establishment, epileptics, if they were poor, were confined in the imbecile wards of the workhouse; if rich, they were looked after by relatives or attendants or taken as boarders by people of various classes of life, who for pay undertook this trouble and responsibility without being always qualified. Poor epileptics who were not sent to the workhouse were often miserable in the extreme, a source of constant anxiety and dread to their relatives and hence frequently confined in their homes and denied all liberty and many necessarily became stupid or insane. In spite of all precautions of relatives and attendants fatal accidents were frequent and often these were considered special acts of Providence for the relief of all concerned. In the workhouse these patients were herded with the least harmful insane without any effort toward instruction, employment or amusement. The primary objects of the Maghull Colony were to keep epileptics safe, occupied, trained in body and mind and to allow them all possible liberty. Unexpected success has followed this venture. The chief obstacle encountered has been the defective education of the inmates as admitted. The old doctrine among medical men that epileptics must not be bothered led to a total neglect of any steps toward their physical, mental and moral training. The products of such a policy are the adult epileptics of the present day and are very hard to deal with. Another source of ignorance among epileptics is the fact that when the disease appears in later life often all early education will be forgotten and the individual must be trained anew from the start. Again, epileptics are often unevenly balanced so that certain faculties, like the musical, imitative and introspective, are unusually acute, while others are obtuse. They divide the education of the patients into two classes, those of the ordinary school age and those of adult life with originally defective or lost education or training. They find that, on the whole, such subjects acquire with tolerable satisfaction the simple branches, namely, reading, writing, arithmetic, wood-carving, joinery and simple technical arts. The teaching of these unfortunates must necessarily be under the watchful eye of competent physicians; but with such at hand, they find at Maghull considerable success in giving to these wretched beings something to think about and to live for.

SKIN AND GENITO-URINARY.

Urinary Fever.—By this term is meant the elevation of temperature and accompanying symptoms evoked by the passage of a sound or catheter, by operations or other impressions made upon the lower urinary tract, the kidneys and urinary organs being free from disease. G. L. HARBOUR (Med. Times, Mch., 1902) says that the simple passage of a catheter may cause symptoms and results of all grades from a mere faintness, recovered from in a few minutes, to a violent chill, followed by a temperature of 103 to 105° F., accompanied by suppression of urine and convulsions, sometimes terminating in death in from six to forty-eight hours. The nervous connections with the genito-urinary tract are so peculiarly constructed, that, if a local irritation be at all pronounced, the most widespread nervous storm may prevail over the entire sympathetic and cerebrospinal systems and involve the cardiac, pulmonary and renal circulation to such an extent as to induce syncope, acute renal congestion and finally even convulsions and death. The urine is very much diminished usually, suppression lasting from one to three days in very severe cases. In regard to the differential features distinguishing urinary fever from pyelonephritis, the former is marked by the sudden onset with a brief and rapid duration of the fever, by the history of the case, in regard to the kidneys, bladder and lower urinary tract as to whether previously in a healthy condition. From uremia it is more difficult to make the distinction as suppression may occur for several days, thus poisoning the blood from uneliminated waste products, terminating in death, at least, in part from uremia. The absence of coma and convulsions, etc., excludes uremia.

Defect of Penis—The case of a boy, seventeen years of age, whose penis is undeveloped and has an unyielding fibrous cord where the corpus spongiosum ought to be, is reported by A. M. VANCE (Pediatrics, Mch. 15, 1902). The urethra is of good size. During erection the glans does not become enlarged, but the penis shows the typical appearance of chordee and the suffering is intense.

Relief of Acute Retention Due to Prostatic Enlargement.—The beginning of much trouble both for the physician and the patient frequently dates from the time when an attempt is made to relieve an acute retention. Believing that the obstruction is due to a rigid obstacle a metallic catheter is often used with serious results. W. T. BELFIELD (Therapeutic Gazette, Mch., 1902) explains that the obstruction is due to an edema which offers only slight resistance to the passage of an instrument. It is best to begin with a flexible gum or silk catheter or a Mercier catheter which is especially adapted to the cases, for the beak turns up on the end, avoiding any false passages which may be present on the posterior wall of the urethra. A No. 15 (English) or a larger instrument is more apt to pass than a smaller one, because less spasm is excited. Gentleness must always be observed. If there be a partial stricture or if there be many false passages a metallic catheter of good size and with a long curve may be used, but it should be guided by the finger in the rectum. Under no circumstances should it be forced after it enters the prostatic urethra, for an obstacle requiring force to overcome it lies outside the urethral lumen and should be avoided, not attacked. If no instrument can be made to enter the bladder a suprapubic puncture should be made and this is preferably done with a small trocar and cannula. Through the latter a small Nélaton catheter is passed deeply into the bladder, the cannula withdrawn, and the catheter fixed by adhesive straps. It is understood that urotropin or cystogen should be administered at once in all cases of acute retention and continued till the danger of pus infection in the urinary tract has passed.

Drainage of the Bladder by the Immobilized Urethral Catheter.—Notwithstanding the vigorous opposition of Poncet and others to the drainage of the bladder by means of the urethrovesical immobilized catheter (*sonde à demeure,* H. BERTHIER (Gaz. hebd. de Méd. et de Chir., Mch. 23, 1902) maintains that the clinical results obtained by this simple device are equal and at times superior to those following cystostomy. The general indication for vesical drainage is retention and stagnation, whether due to prostatic enlargement or to urethral stricture. The real or supposed disadvantages of the immobilized catheter are of two kinds—mechanical and infectious. Practically the drainage obtained by a large rubber catheter with frequent irrigation suffices, although it may not be perfect. On the other hand, the drainage in cystostomy is not perfect either; numerous instances are recorded of the formation of secondary calculi when cystostomy had been performed. The alleged painfulness of the *sonde à demeure* is not borne out by clinical facts. There is practically no pain after the first few hours. While the care of the catheter demands regular attention, an intelligent and not too infirm patient can easily see to the matter himself; others are obliged to have recourse to a physician every five or six days. With due precautions it is easy enough to avoid infection of the bladder. The precautions, must, however, be strictly observed. The indications for cystostomy may be thus formulated: (*a*) When catheterization is impossible, which is rare among prostatics, less rare in cases of stricture; (*b*) in certain forms of painful cystitis with pronounced vesical sclerosis; (*c*) in grave vesical or prostatic hemorrhage; (*d*) when lithotrity cannot be practised in cases of infected bladder containing many small calculi or a single large and hard calculus; (*e*) in subacute infections which the immobilized catheter has failed to relieve.

Litholapaxy under Cocaine.—A procedure for which many advantages may be claimed has been carried out by G. K. SWINBURNE (Jour. Cutan. and G.-U. Dis., April, 1902) in a man, aged sixty-two years, with two large vesical calculi. A preliminary treatment was first instituted consisting of the administration of urotropin, grs. 7½, t.i.d. for three weeks, with bladder irrigation twice a week and passage of the usual instruments. For the operation, six drams of a 2-per-cent. solution of cocaine were injected by soft catheter through the posterior urethra into the bladder and a small amount into the anterior urethra. By the aid of a Keyes lithotrite one calculus was crushed and the fragments were removed with the Chismore evacuating bottle. Operation lasted three-quarters of an hour and the patient walked home; no reaction followed. A month later the other stone was removed with equally good results. Twice during the next year small amounts of gravel were evacuated, but otherwise there is freedom from all symptoms. Patient did not have to remain in bed and has a bladder free from scar, which would have followed a cutting operation.

Blastomycetic Dermatitis.—Two cases of this interesting disease are reported by F. J. Shepherd (Jour. Cutan. and G.-U. Dis., April, 1902) which were successfully treated by potassium iodide. Both patients were males, aged thirty-eight and seventy-two years respectively. The lesions in each case were on the face. Diagnosis was confirmed by finding the budding yeast forms in the tissues. Curettage and cauterization of the affected surface were without result, but improvement was noted in a week after beginning the iodide treatment, the dosage varying from grs. 20-60 t.i.d. Another case is reported by Walker and Montgomery (Jour. Amer. Med. Assoc., Apr. 5, 1902) which is of interest as being the only instance recorded in which an undoubted cutaneous blastomycosis has been followed by a systemic infection with blastomycetes, seven years after the beginning of the lesion on the back and face. Death was diagnosed as due to miliary tuberculosis secondary to the cutaneous lesion. Microscopical examination of the lung tissue, however, showed the characteristic organisms, which seemed to have caused inflammatory changes comparable to those found in pulmonary tuberculosis. During the progress of the disease no remedy had been of any benefit.

The Anatomic Factor in Baldness.—If the term "scalp" be restricted to the soft parts which cover the vault of the cranium above the level of the temporal ridges and the superior curved line of the occipital bone, it remains a striking fact that this area corresponds quite closely with the limits of ordinary baldness. Elliott (Jour. Amer. Med. Assoc., Mch. 29, 1902) believes that the anatomical factor largely influences this condition and calls attention to the fact that wherever, as in the palms and soles, there is an intimate connection between the skin and underlying fascia, hair is absent. The skin of the scalp, moreover, has no underlying muscles to exercise it and although the scalp is very vascular there is little to aid the return flow. The lymphatic and venous circulation is also largely obstructed by the pressure of the hat. The indications for treatment therefore point to regulated massage before the absorption of the underlying fat and atrophy of the occipito-frontalis muscle—that is during early life.

Herpes Zoster.—A severe case of the ophthalmic variety of this eruption is reported by W. S. Durand (Phil. Med. Jour., Mch. 29, 1902) which is of interest because of the treatment used. The lesion involved one eye and the corresponding side of forehead, with extreme pain in the area of distribution of the left cervical plexus and closure of the eye. Several drops of a solution of adrenalin chloride, 1-1000, in normal salt solution, with 0.5-per-cent. chloretone were instilled into the eye at minute intervals, and caused an immediate obliteration of the swelling and abatement of the pain. The instillations, together with swabbing of the entire eruptions, t.i.d., brought about a subsidence of the lesion in ten days, together with a gradual limitation of the painful area. Internally, Fowler's solution, digestive and laxative tonics were also administered.

Prostatectomy Forceps.—In the enucleation of the prostate gland considerable difficulty is sometimes experienced in holding the lobes in place so that pressure may be successfully made. R. Guitéras (N. Y. Med. Jour., Mch. 29, 1902) has had made for this purpose an instrument which resembles the ordinary tongue forceps. The blades are oval, fenestrated in the center, smooth on the outside and serrated on the inside, about three-quarters of an inch wide and an inch long. The enucleating finger can therefore easily work around the forceps which holds the lobe without any interference. The handles are the same as used in any similar instrument with the exception that this has eight "catches" in its lock, thus allowing any degree of pressure. In operating he first does a perineal urethrotomy; then he dilates the prostatic urethra by means of a Kollman dilator, afterward using his finger and perhaps his thumb. After inserting the forefinger into the rectum and placing it at the apex of the prostate, a thin pair of sharp-pointed scissors are passed into the incision till their points come in contact with the prostatic urethra, when the floor is either cut through or the points of the scissors are passed through the mucosa and capsule and the blades opened so that the tissue is torn. The forefinger of one hand is now easily inserted into this space and, having made a few sweeps with the finger around the apex of the gland, the forceps can be pushed up alongside the finger and can grasp the lobe, holding it in position while the forefinger completes the separation of the gland from its capsule.

Treatment of Hydrocele.—Although the radical operation of Von Bergmann may be necessary in some instances, the majority of cases of hydrocele can undoubtedly be cured by a careful use of the injection method, and although there is a difference of opinion in regard to the relative efficacy of tincture of iodine and carbolic acid, the latter seems to give the more certain results. On account of the ill-effects frequently resulting from the use of large doses of carbolic acid, W. B. Coley and P. A. Satterwhite (N. Y. Med. Jour., Mch. 29, 1902) report a series of cases in which they have used only two-and-a-half or three-minim injections of carbolic acid and have obtained excellent results. It is necessary, however, that great care be taken to thoroughly squeeze out all the fluid before the acid is injected. Furthermore, Schering's carbolic-acid crystals should be used to insure purity and these may be dissolved in just enough glycerin to liquefy the crystals. A double cannula instrument is employed so that after the fluid has been removed the smaller cannula, screwed on to a syringe full of carbolic acid, may be inserted into the larger cannula and the necessary solution injected. Practically no risk is thus taken and the percentage of cases is at least seventy-five per cent. if the details be carefully followed.

Poisoning from "Flash-lights."—The danger arising from the use of photographic flash-lights has called forth a communication from A. Graefe (Deut. med. Woch., Mch. 13, 1902). The magnesium oxide ordinarily used is not dangerous, but when combined, as found by the writer, with chlorate of potash, its ignition produces the extremely poisonous chlorine gases. In the reported case the patient after burning the "flash" was found unconscious; the condition lasted several hours and was succeeded by severe and continued vomiting. Later on came headache, depressed pulse, numbness in extremities, severe bronchitis, and impairment of vision (midriasis, a clouding of the lens, paralysis of accommodation and of the external recti). Recovery was very slow.

OBSTETRICS AND GYNECOLOGY.

Cancer of the Uterus.—Careful consideration of well-prepared histories and conservatively drawn conclusions therefrom are always interesting. E. Wertheim

(Ctlblt. f. Gyn., 1902, No. 10) reports three series of thirty cases each of cancer of the uterus and states that he is of the opinion that it is an error to remove only the lymphatic glands at the time of operation. It is exceedingly necessary to take away as much of the parametrium as possible. For this purpose the vaginal operation does not give the same opportunities as does the abdominal, which affords a better field to the vision and a much more easy approach for the operator. The permanent results probably rest upon the thoroughness with which these features of the work are carried out. It must be admitted that mere removal of the lymphatic glands aids in the permanence of the result. If, however, statistics were prepared with relation to the single point of relapses among the lymphatic glands it would probably be found that quite a large number of cases show no secondary deposits in the lymphatic glands as late as two, two and one-half or even three years after the operation.

Traumatic Granuloma of the Bladder.—Neoplasms of traumatic origin both benign and malign are always worthy of attention, especially when they affect such active viscera as the bladder. G. KOLISCHER (Ctlblt. f. Gyn., 1902, No. 10) reports several cases in which granuloma appeared in the bladder of women after injury. His final conclusions are as follows: These tumors are without doubt usually caused by a single severe or a continuous more or less severe injury of the mucous membrane of the bladder. The increase and persistence of these granulomata are probably brought about by the fact that at the time of the injury there was already present an altered condition of the wall of the bladder which acted to prevent a straightforward and easy healing. It is also necessary to notice that it is not sufficient as a rule in order to cure these granulomata simply to remove the inflammation of the bladder commonly present, but that it is much more necessary to extirpate the granuloma by an operation. It seems that this procedure can be done with surety through a cystoscope. A good means of avoiding the bleeding which is essential to such an operation through this small instrument consists in applying a solution of adrenal extract. As a rule, the results of such operations are permanent.

THERAPEUTICS.

Treatment of Malaria.—In the very severe and in the very tenacious forms of malaria it is well known that quinine and the allied alkaloids have but slight action and that arsenic is uncertain and variable in its effects. A. GAUTIER (Rev. de Thérap., Mch. 1, 1902) has given the name arrhenal to an organic arsenic preparation, the disodium methylarseniate, which is closely allied to the cacodylates and which surpasses in action even large doses of quinine. The dose is 0.05-0.1 gram by hypodermic injection when prompt action is desired. By systematic blood-counts it was also found that the post-malarial anemia was markedly benefited.

Izal Oil as an Intestinal Disinfectant.—The limit to the scope of the antiseptic method both in preventing and in subduing disease has by no means yet been attained. Such is the hopeful view taken by M. H. GORDON (Lancet, Mch. 8, 1902). Izal oil, which is unfortunately a proprietary article, was discovered by J. H. Worrall while investigating by-products met with during the conversion of coal into coke. Chemically it consists of oxidized hydrocarbon with a larger proportion of hydrogen to the carbon than the members of the phenol series and a less proportion than the members of the methyl-alcohol series. It has a high boiling-point and is insoluble in water. The main preparations are: (1) Izal oil; (2) an emulsion containing 40 per cent. of the oil, and (3) ordinary izal fluid, which is also an emulsion containing 40 per cent. of the oil, but not as specifically refined as the last. This new compound would seem after the very severe bacteriological test to which it has been subjected to fulfil the very ideal of an intestinal antiseptic. Its germicidal properties are of very high grade, while its toxicity to the individual is encouragingly low. Without attempting to go into the detail of these experiments which have been made with the utmost care, it will suffice to note some of the results obtained. The izal was given in the form of capsules, each one containing two minims of the pure drug, not more than three capsules being given at a time. The largest amount given in twenty-four hours was twenty-four minims. No unpleasant symptoms resulted. The movements have the characteristic odor of the drug, showing that it is capable of exerting its antiseptic influence throughout the alimentary tract, even when given in this dosage. An interesting deduction from the experiments was that the diminution of micro-organisms in the feces was broadly proportionate to the dose of the drug; thus after twenty minims of izal oil had been taken, the reduction of the organisms was 68 per cent., and only after forty-two minims did it reach 86 per cent. On the other hand, after izal had been stopped the organisms were increased by 300 per cent. It would seem justifiable to believe that these figures establish the worth of a new intestinal disinfectant incomparably more valuable than either salol or betanaphthol. The only disappointing factor is that all the pathogenic germs are not destroyed. Inasmuch, however, as such a large percentage of them are disposed of one may hope that the equilibrium of the alimentary canal, which is undoubtedly a potent factor in health, may be reëstablished by the efficient help of this drug, and that its help may suffice in critical cases of intestinal infection to tide the individual over periods which might otherwise prove impassable.

Trifacial Neuralgia.—The results in the treatment of this severe and tenacious malady have never been satisfactory, for although temporary relief may be obtained the pain usually returns sooner or later with even greater severity and the patient's life is made most miserable. H. T. BARBER (N. Y. Med. Jour., Mch. 15, 1902) recently obtained excellent results from the use of aconitine in doses of one-tenth of a milligram every four hours, continued till the pain had subsided, and then followed by the administration of large doses of iron kept up for several weeks following. The tonic treatment seems essential to permanent benefit.

Therapy of Ductless Glands.—There is a probability that in the near future the therapy of the secretions of the thyroid and thymus glands, the spleen and suprarenal capsule will be much better understood and valuable results obtained from their use. Thyroid administration has already proven a specific in myxedema. In simple goiter, says M. SHELLENBERG (Med. Times, Mch., 1902), before degeneration has occurred, thyroid treatment often brings about destruction and absorption of the overgrown gland. The thymus gland has not been found to have any valuable therapeutic properties. The suprarenal extract is now rather extensively used as a local hemostatic and internally to stimulate the heart and increase the blood-pressure. There is considerable proof that this extract is valuable in the treatment of Addison's disease. The splenic extract has been employed by H. C. Wood in several cases of exophthalmic goiter and most satisfactory results have been obtained in two. The tumor has almost disappeared, the nervousness and dyspnea have ceased, although some exophthalmos persists and the heart is still irritable. Wood states that he has never seen so near an approach to a cure in exophthalmic goiter as in these two patients.

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No. 111 FIFTH AVENUE, NEW YORK.

Subscription Price, including postage in U. S. and Canada

PER ANNUM IN ADVANCE	$4.00
SINGLE COPIES	.10
WITH THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, PER ANNUM	8.00

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LEA BROTHERS & CO.,
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SATURDAY, APRIL 26, 1902.

A GREAT PRACTICAL CLINICIAN.

IT was a gracious tribute to a deserving man for the New York Academy of Medicine to send a cablegram of congratulation to Professor Ernest von Leyden of Berlin on the occasion of the celebration of his seventieth birthday on April 20th. Few men in modern medicine have merited the praise of their contemporaries more than Professor von Leyden. The expression that has often been employed of lesser men may well be applied to him, *nihil tetigit quod non ornavit.*.

He has taken up no subject without bettering it. Anything that Leyden has worked at bears the impress of his genius for patient successful clinicial investigation. His work embraces almost every field in the science of medicine. Everywhere there are ideas of his of immense practical importance and of suggestive value.

His career should be a source of inspiration for many a man beginning the profession of medicine at the present time. He was a student of Schoenlein and Traube at Berlin and afterward entered the Prussian Army. During his service as a military surgeon he investigated especially the nervous diseases which occur among soldiers. He had the opportunity to make autopsies and in 1863, when only just past thirty years of age, he wrote a very striking monograph, Die Graue Degeneration der Hintern Rückenmarks-Stränge (The Gray Degeneration of the Posterior Columns of the Spinal Cord), which retains even to the present day something more than historical interest. Principally as the result of this work, he received a call to the ordinary professorship of medicine at the Prussian University of Königsberg and became the director of the internal medical clinic at the University hospital there. At this time he was only just beyond thirty-two years of age. His first work at Königsberg saw the light in the *Beiträge zur Pathologie des Icterus,* published in 1866.

After seven years of work in Königsberg, all of it of more than usual value, Professor Leyden was called to the University of Strasburg. It was the purpose of the German Government to propitiate the inhabitants of Alsace and, as the French University of Strasburg had been destroyed by the cession of the province to Germany, the Prussian Government resolved to begin the work of propitiation by founding a university that would be known throughout Europe for the excellence of its faculty. Von Leyden and Von Recklinghausen, whose work had attracted so much attention at Königsberg, became members of the new faculty. Von Leyden's attention was once more directed to nervous diseases and in 1874 the first volume of his classical work, Die Klinik der Rückenmarks Krankheiten appeared. The succeeding volumes were issued the following years. Other works in medicine of almost equal clinical value attracted the attention of the medical world to the faculty of the new University before it was yet five years old.

As a consequence Von Leyden was called in 1876 to Berlin to succeed his old professor, Traube. In 1879 with Von Frerichs he founded the *Zeitschrift für klinische Medicin.* Since then most of Von Leyden's work has appeared in this journal and his contributions to medicine either directly or through the assistants whom he has inspired embody some of the best work in latter-day clinical medicine. His ideas have always been received with respectful attention by the medical world because, while no one doubted the originality of his genius, every one recognized in him a thorough-going conservatism that made his opinion seriously valuable. At the present moment few clinicians deserve to hold a higher place in the estimation of the practitioners of the world than Von Leyden, whose work has always been of an eminently practical character.

SUBSTITUTION ONCE MORE.

THERE is no more pathetic commentary on human nature than to see a scientific man devoting years to the discovery and perfection of some remedy that will combat disease, and then to watch the tricky man of business bending every effort to imitate his discovery, and to line his pockets with dollars by passing off a fraudulent substitution.

It is a grim fact, though few of us realize it, that every well-known drug is adulterated and every standard preparation is imitated. Morphine phenacetin, trional, sulphonal, strychnine, quinine, every agent on which we depend to stimulate the flagging heart through a crisis, to deaden pain or to quiet nerves; all are at times subject to gross sophistication. The satire of Satan is in the combination when a conscientious, keen-witted physician ponders his patient's every symptom and writes a prescription, or orders a preparation with the exact dose suited to that patient's dire need, and then hands it to a member of the family, who carries it in haste to the drug-store on the corner, from which is promptly dispatched a carefully weighed and certified preparation made from old, cheap roots, non-official leaves, and adulterated powders. The trained nurse carefully doles out the allotted portion at stated intervals, but the anxious doctor realizes that his patient does not react.

How often in such cases does it occur to us that any and every drug which may enter into our prescriptions may be adulterated? And if it did occur to us, how could we prove it? Our own ignorance of the preparation of drugs is no fault of ours. The days are passed when the country doctor culled and brewed his thoroughwort and blue-cohosh. The only assurance that we can have is in the integrity of the pharmacist and manufacturer; and because of our need of this assurance, we urge, nay, we insist, that our brother physicians interest themselves more in ascertaining the reputation of the firms with which they deal. The recent discoveries in physiological chemistry and the corresponding manufacture of preparations of drugs along the line of these discoveries are offering great possibilities to the physician, and we regret to say also to the unprincipled manufacturers of imitations. It is galling to think that, while a patent medicine man can legally defend his rights, the physician whose prescriptions are filled with worthless materials has no redress.

We are happy to see, however, that the importer of one of the newer German preparations, on which physicians have learned lately to depend, has acted promptly in this matter of self-defense and has brought suit against an imitator. The Superior Court of Massachusetts has given a decree in favor of the M. J. Breitenbach Company, who import Gude's Pepto-Mangan, against Henry Thayer and Company, who were putting out a package closely resembling that of Gude's, and called Peptonate Manganate. The judgement was sharp, sweeping, and, we hope, salutary.

This flagrant imposture is but a passing illustration of what is going on all the time. It shows the need that we, as physicians, examine our prescriptions, see that our orders are filled exactly, and that we should make a public fuss when such instructions are tampered with. It is no use to shift the responsibility upon the lawmakers. There are enough pure-drug laws in New York State to hang an offender. But they are useless because they are not enforced. It is our duty as individuals to insist on obtaining pure products.

ANTITOXINS, VACCINES AND MUNICIPAL MANUFACTURE.

IN New York City the clash of interests between private mercantile enterprise and corporate municipal endeavor has come to the surface in a rapid and striking manner. There have been mutterings in the past and the St. Louis tragedy and the Camden accidents have each in turn served as cudgels for the opposing parties, and at times for internecine war in the camps of one party.

Last week a hearing was given by Mayor Low to representatives of the drug trade and a petition signed by over one thousand "physicians, manufacturing, wholesale and retail druggists, and taxpayers," asking that the sale of vaccine virus and of diphtheria and other antitoxins by the Department of Health be stopped.

The reasons submitted fall under three heads —that the sale of these products imposed on the Department bacteriologists additional duties which were repugnant to the scientific mind; that it was contrary to the principles of political science, and unjust to mercantile interests; and that it diminished confidence in the Board of Health. It was further presented that if the Board of Health needed appropriations to carry on their scientific work, such money should be granted them; but it should not be allowed to derive a revenue by selling therapeutic agents in competition with druggists. They conclude, "Let the gratuitous distribution of virus and antitoxin continue, but stop the sales."

Elsewhere (Medical News, 1901, Vol. 79, p. 825) we have held that "the evidence warrants the conclusion that any board of health, city or State, is privileged to manufacture sufficient of these or other like commodities to provide for the sick poor of the community who are a charge upon its bounty. To manufacture over and above such quantities or to make sale of the same for private or for civic gain is, we believe, unjustifiable."

We have discussed most thoroughly the chances for deterioration, sophistication and adulteration of products of this type, and we hold that the office of a health department is that of a regulator and inspector of remedies used and not a sales agent for the same. Reputable houses have more at stake than has the shifting political menage that regulates a health department; moreover, civil suit can be brought and damages collected from a manufacturer if goods are not as represented, whereas the citizen has no recourse against a municipality. This seems to be the lesson taught by the St. Louis accident.

ECHOES AND NEWS.

NEW YORK.

Dr. Park at Yale Medical School Commencement.—Dr. Roswell Park will deliver the address at the anniversary exercises at Yale Medical School on June 24th.

Gift to the Saratoga Hospital.—Mrs. Henry B. Hyde of New York City has provided the Saratoga Hospital with a full equipment of sun parlors, which have just been completed.

Professor Leyden's Seventieth Birthday.—On Saturday, April 20th, Professor Ernest von Leyden of Berlin celebrated his seventieth birthday. On motion of Dr. Einhorn the Academy of Medicine decided at its last meeting to send him a cablegram of congratulation on that event. Professor von Leyden is at the present time one of the greatest living clinicians and a man to whom in many branches of medicine the profession owes more almost than to any other man alive. At the ceremonies in Berlin in honor of the auspicious event a bust of Professor von Leyden was unveiled and Professor Nothnagel of Vienna delivered an address.

Appointment of Dr. Brettauer.—Dr. Joseph Brettauer has been appointed attending gynecologist at the Mt. Sinai Hospital to succeed the late Dr. Paul F. Mundé.

The Boer Prisoners in Bermuda.—The May number of "The Era" has an illustrated paper on "The Boers in Bermuda," by Dr. J. B. Mattison of New York. During his outing there the past winter, he was given access to the captive camp, the last civilian so favored, and his story is of interest.

Presbyterian Hospital Alumni.—The Society of the Alumni of the Presbyterian Hospital in the City of New York was incorporated under the laws of the State on April 16, 1902. At the annual meeting held at the Presbyterian Hospital on April 12th, the following officers were elected for the ensuing year: President, B. Van D. Hedges, M.D.; Vice-President, David Bovaird, M.D.; Secretary, John Howland, M.D. The following Board of Directors was elected: To serve five years, Henry L. Shively, M.D.; to serve four years, William K. Simpson, M.D.; to serve three years, Arthur M. Jacobus, M.D.; to serve two years, John A. Hartwell, M.D.; to serve one year, Forbes Hawkes, M.D.

The next meeting of the Society will be held at the Arena on Saturday evening, May 17, at 7.30 p.m. Dr. C. K. Briddon will address the Society on "Reminiscences of Half a Century in Medicine and Surgery."

Dr. E. A. Tucker.—The Medical Association of the Greater City of New York has learned with the deepest regret of its loss by death of a most promising member, Dr. Ervin A. Tucker, one of the founders of the Association. By inherent ability, thorough preparation, and hard work, Dr. Tucker had gained the front rank in his specialty of obstetrics, and had won the admiration and respect of his colleagues and his many friends. He seemed to be at the threshold of a most useful and distinguished career when his life closed. Be it hereby

Resolved, That we extend our deepest sympathy to the bereaved widow; that this note be entered upon our minutes, and that a copy be forwarded to the widow.

Edwin B. Cragin,
J. Clifton Edgar,
J. Milton Mabbott,
Committee.

Manhattan Dermatological Society.—The last meeting was held April 4, 1902, at the residence of Dr. Pisko, Dr. Wm. S. Gottheil presiding. Dr. E. L. Cocks presented a patient with annular shaped patches on abdomen, chest and upper and lower limbs; the eruption shows purplish centers; one year ago a similar eruption with vesicles; at present no vesicles, although they were present a few days ago; eruption rapidly fading since then and the picture of erythema multiforme not a typical one; appearance one year ago more marked and typical. Dr. Cocks presents it as erythema multiforme. Dr. Oberndorfer was not willing to make that diagnosis at first glance; the indistinct eruption and atypical picture as now presented make him hesitate in making any other diagnosis; in view of the history he agrees with Dr. Cocks. Dr. Kinch said the limbs look like erythema multiforme, but the neck shows a distinct scaly patch, more like eczema seborrhoicum. Drs. Pisko, Bleiman and Gottheil think the eruption resembles eczema seborrhoicum rather than erythemata multiformis.

Dr. Gottheil showed a woman with lesions on face, neck and arms. Many years ago there developed red circular patches on forehead, then on neck and arms; marking these original sites there can be seen distinct circular areas of atrophic skin, at these points being quite thin, loose and elevated, with margins sharply defined; the condition had been diagnosed by previous observers as lupus, eczema and a nerve lesion; to these Dr. Gottheil took exception and believed the atrophy due to pressure from a previous growth, since absorbed.

Dr. J. C. Johnston said he had already seen the case and that the original trouble might have been a soft fibroma, which by pressure caused atrophy of the skin and subcutaneous fat and muscle; subsequently, the tumor underwent resolution. Dr. Geyser believed the atrophy due to trophoneurosis. Dr. Abrahams thought this case resembled his case of atrophia cutis propria recently presented; if neoplasm was present he did not think it would have escaped observation and record. Drs. Cocks, Bleiman and Oberndorfer inclined to the opinion of neoplasm with subsequent pressure, atrophy and finally absorption of growth.

Dr. Sobel presents a child five weeks old, born at full term, precipitately; mother had six living children, no abortions; placenta delivered spontaneously and was of a pale green color (mother's statement); child shows no sign of lues or sepsis; temperature normal and general circulation good, heart and lungs normal; likewise abdominal organs. Over both deltoids there is marked induration of skin and underlying tissues; right and left buttocks hard and leathery; the chest shows small areas of induration; face not involved. Presented as a case of "scleroma neonatorum." Diagnosis concurred in. In speaking of prognosis, Dr. Sobel thought that the outlook here was not so grave, because the child had lived for five weeks; the temperature is normal; the general circulation is good and the process quiescent.

Dr. Pisko showed two cases of zoster; one involving the right iliac region; the other the right chest (axillary and mammary line). In the latter case the patient was treated with Fowler's solution, 10 drops t.i.d., for an old lichen eruption on foot and ankles; there developed during arsenical treatment mild gastro-intestinal disturbances and the appearance of the zoster. Dr. Pisko regards the zoster due to the arsenic. In another (a third case) Dr. Pisko saw a case of zoster develop during antipyrine medication. Dr. Oberndorfer said that zoster was a common disease and was not willing to attribute its appearance to the arsenic given. Dr. Johnston said arsenic may have been causative in this case; he saw it develop in a case of mycosis fungoides, after the administration of arsenic. Drs. Cox, Abrahams and Sobel regard the zoster as accidental and not due to arsenic.

Dr. E. L. Cocks presented a case of lupus vulgaris showing the result of treatment; right side treated with pure carbolic acid locally and iodoform internally; left side untreated; right side healed, result excellent; Dr. Cocks feels justified in continuing along the same lines, but asks what influence the X-ray would have on the left (untreated) side. Dr. Geyser said that the immediate effect would be breaking down of tissue, but the remote result would be cure. Dr. Abrahams said urea was given in tuberculosis and suggested it be tried in this case, 30 grains daily. Drs. Sobel and Gottheil would indorse the method of Dr. Cocks, also trying urea.

Dr. Oberndorfer presented a case of erythema exudativum iris, limited to both forearms; patient has an attack nearly every year which lasts two or three weeks. Case considered typical. A case of molluscum sebaceum et verrucosum limited to scalp; shown by Dr. Oberndorfer. The eruption began two weeks ago and spread rapidly over entire scalp; from the small pearly tumors the molluscum corpuscle could be easily expressed.

Dr. Gottheil shows a case of erythema multiforme, involving chest, back, upper and lower limbs; circular patches with purplish centres. On the neck patches of vitiligo. Dr. Johnstone thought it looked like pityriasis rosea. Dr. Kinch said a syphilide; Drs. Sobel and Cocks erythemata multiformis.

Dr. Pisko presents a case of diffuse scleroderma; as a result of treatment with thyroid extract 5 grains t.i.d., (which he stands well), the condition has been greatly improved; case under observation for five years. Taking thyroid now two months.

Dr. Gottheil presented his case (already shown to society) of sarcoma cutis. Diagnosis confirmed by microscope; under treatment one year with excellent results; tumors gradually diminishing.

Dr. Pisco presented a case of recurrent erysipeloid, confined to upper lip and left wing of nose; first attack two years ago; second, three months ago; unaccompanied by constitutional symptoms; there are redness and some thickening of parts involved. Dr. Abrahams saw many such cases, usually accompanied by lesions of the nose; by treating the latter the former got well. Dr. Johnstone objects to the term erysipeloid; the latter was applied to "Rosenbach's" disease and often seen in fish-dealers and butchers, on the thumb; on the face due to infection. Dr. Sobel sees no difference in the terms erysipeloid and pseudoerysipelas; the accompanying nasal complication he treats with solution ichthyol 50 per cent. Dr. Bleiman said that the lesion of nose was not a nasal catarrh; if so we would see more such cases; the lesion was a folliculitis primarily and confined to the dermo-nasal juncture.

Dr. Pisko also showed a second time his case of folliculitis of forearms, with microscopical sections showing granulomatous formation (and infiltration of hair follicles). Dr. Johnstone said this condition has been variously described under many different titles. Dr. Pisko said the condition remains uninfluenced by any method of treatment.

Dr. Geyser showed a radiograph of Dr. Abrahams' case, showing fracture of terminal phalanyx with exostosis.

Dr. Gottheil showed photographs of his case of pityriasis rosea presented at previous meeting.

What the Health Department has Done.—This is the outline given by the "Evening Post" of what the Health Department has done since January 1st, under Commissioner Lederle: Fought the spread of smallpox by vaccinating more New Yorkers in three and one-half months than have ever been vaccinated in a whole year before; secured better food and better care for patients in contagious-disease hospitals without increasing the expenditures; obtained $500,000 with which to improve and extend the hospital plant, that New York may treat its contagious-disease patients, especially the poor, in a more civilized way; arranged for prompt notification to all schools and philanthropic societies of cases of contagious disease, thus enabling them to isolate all who have been exposed. It has saved the people of the East Side from the nuisance threatened by a proposed $750,000 slaughter-house, whose owners proposed to render fat and boil bones on the premises; set in force a definite policy of reducing the number of offensive trades on Manhattan Island; worked for a purer milk supply by causing the arrest and punishment of between one and two hundred dishonest milk-dealers; secured the arrest and punishment of burners of soft coal who seek to make New York like Pittsburg or Chicago; checked the spitting nuisance by wholesale arrest of offenders; forced the Metropolitan Street Railway to stop using the flat-wheeled cars which keep citizens awake at night; instituted prosecutions by arrest or civil suit on about 1,000 old complaints of all sorts of nuisances, which had been pigeon-holed; secured adequate fire protection for the hospitals, and set on foot plans for the preservation of the city's vital statistics records; with all this new work, effected so large a reduction of the pay-roll on January 1st that a cut of only $62, in a budget of $1,000,000, was necessary when the Board of Estimate on April 7th ordered all departments to reduce the salary-list 10 per cent. Surely this is a good record.

Long Island College Hospital Alumni Association.—At the next regular meeting of this Association Dr. Glentworth R. Butler will read a paper on "Difficulties in the Diagnosis of Certain Febrile Diseases." Drs. A. Stengel, F. A. Packard, W. H Thomson and A. Jacobi will discuss this paper. Dr. J. O. Polak will read a paper on the "Early Diagnosis of Uterine Carcinoma," to be discussed by Drs. J. G. Clark, J. M. Baldy, E. Janvrin and W. R. Pryor.

PHILADELPHIA.

Presbyterian Hospital.—Dr. George C. Stout has been elected chief of the department of otology and laryngology to succeed the late Dr. Charles H. Burnett. Dr. Stout is also professor of otology at the Philadelphia Polyclinic and laryngologist to St. Mary's Hospital.

Death of Dr. Wirgman.—Dr. Charles Wirgman died April 19th, after a long illness. He had long been a trustee of Jefferson Hospital and visiting physician to many of the hospitals of the city.

Filter Beds near Completion.—Rapid progress is being made on the four filtration plants being constructed and it is believed that they will be finished months ahead of the time specified in the contracts. This is particularly true of the two filter beds at Roxborough, both of which are practically finished and will permit of preliminary tests within the next few weeks.

Sues for a One-Dollar Fee.—A report from Williamsport states that Dr. C. D. Hunt has brought suit against the County Commissioners to recover a one-dollar witness fee. Dr. Hunt was called upon to testify before the Coroner in the case of a man who had fallen dead on the street. The suit will be a test case, as the Commissioners claim there is no law authorizing the payment of the fee.

Christian Scientists not Held Responsible for Death of Child.—Coroner Dugan has refused to hold two women practitioners of Christian Science responsible for the death of a five-year-old child from diphtheritic croup. A physician who was called by one of the women found the boy dead on his arrival and reported the case. As no charge for their services had been made it was held that no prosecution for illegal practice could be brought.

Rush Hospital for Consumptives.—A farm of 47 acres in Chester County has been acquired for use as a country branch for the treatment of incipient cases. The site has an elevation of 635 feet. If results justify, it is the intention to erect cottages similar to those in the Adirondacks.

Dr. Welch Again Commended.—At the business meeting of the County Medical Society, April 16th, the candidacy of Dr. William M. Welch for the presidency of the State Medical Society was again endorsed. The following resolutions were also adopted:

Resolved, That the Philadelphia County Medical Society heartily endorses the administration of the Municipal Hospital of Philadelphia during the smallpox epidemic.

Resolved, That it commends Dr. William M. Welch and his able corps of assistants for the efficient and thorough manner in which every detail of the arduous and responsible work of that institution is, and has been, carried forward.

CHICAGO.

Transfer of Incurable Patients.—The Superintendent of the Cook County Insane Asylum has transferred sixty-five incurable women to the Hospital for the Incurable Insane at Bartonville.

Examination for Internes.—The annual examination for internes for the Illinois Charitable Eye and Ear Infirmary will be held at the Infirmary, 227 W. Adams Street, Chicago, Monday, April 28th and April 29th. The number of positions to be filled is three, and the length of service is one year. The examination is open to any practitioner of medicine or graduate of any recognized medical college.

Recommendations from the Medical Officers of the Day.—The medical officers of the day recently established at Cook County Hospital have made from day to day the following recommendations: First, that the number of visitors to the hospital be restricted; second, that a convalescent home be established; third, that rollers be placed on all beds in the hospital; fourth, that closer watch be kept to prevent smuggling of liquor to patients; fifth, that convalescents be permitted to have more outdoor recreation; sixth, that outdoor exercise and tennis be prescribed for internes and nurses; seventh, that a dressingroom be provided for non-septic patients; eighth, that female patients be permitted to visit the lawn; ninth, that the wards and beds be constantly painted.

Followers of Dowie to be Vaccinated.—It is said that John Alexander Dowie, scared either by the presence of smallpox in Zion, or by the bill of expense he will have to meet, has issued an order allowing his subjects to be vaccinated. He will have to meet a bill of expense when the epidemic is over, paying $25.00 a week for the care of each patient at the isolation hospital, besides $2.00 a day for the services of four city policemen who have been enforcing the quarantine.

Surgical Treatment of Neuritis.—At a recent meeting of the Chicago Neurological Society, Dr. Weller Van Hook read a paper on this subject. He said that surgery is in a position to be of service in the treatment of the consequences of neuritis rather than in the management of the actual disease itself, whether in the acute or chronic form. In the acute form of the disease, aside from those instances in which a suppurative lesion is present, very little can be done by surgical means for the relief of the patient. When pressure upon a nerve is superinducing neuritis or neuralgia, the case belongs strictly within the province of surgery. When fractures primarily or secondarily involve large nerve trunks, operative procedures are frequently needed. For example, when a fractured clavicle presses upon the brachial plexus, relief by elevating the fragments and separating the connective tissue from the nerve is an absolute necessity. Not infrequently the long bones, when fractured, similarly press upon important nerve trunks. In the chronic forms of neuritis, surgery is of more frequent avail. The glittering promises which were made some years ago for good results to follow stretching of large nerve trunks have scarcely been realized. It has been demonstrated by both clinical and experimental study that far-reaching consequences follow the stretching of large nerve trunks; the lesions are prone to extend into the spinal cord or into the brain, as the case may be. For this reason surgery is very conservative in the matter of applying nerve stretching in all forms of chronic peripheral neuritis. It is in the treatment of the consequences of peripheral neuritis that surgery finds the greatest scope. In compression of nerve trunks by periostitis, it is quite admissible to remove the connective tissue around the nerve, an operation which is termed neurolysis. Where neuralgias are due to periostitis pressing upon a nerve trunk, as, for example, in the case of the inferior maxilla, it is desirable to chisel away that portion of bone which confines the swollen periosteum and causes it to press unduly upon the nerve trunk. The commonest form of compression is probably by the action of exuberant callus. It is the usual practice here to excise the new-formed bone material from about the nerve, and results have been excellent. Tumors of a non-malignant character that press upon large nerve trunks, producing more or less of an inflammatory condition, would be subject to attack by excision, while perhaps those which are of malignant character might demand removal of the nerve. The method of extraction of the nerve, exaeresis, at first practised by Thiersch, is still in very common use. Undoubtedly, the majority of cases of neuralgia of the trigeminus can be cured by exaeresis, and it is by no means necessary or desirable that the Gasserian ganglion should be excised in ordinary cases of this disease. On the contrary, this formidable and dangerous operation should be reserved for those cases in which peripheral operations have been thoroughly tried.

Prevention of Conception; Criticism of Some Methods.—Dr. Gustav Kolischer read a paper on this subject, in which he said that the prevention of conception was not only a sociologic, but a medical problem. Lately, contrivances which are applied to and left inside of the female organ have become more and more popular. These contrivances, mostly soft rubber pessaries, while not perfectly certain as to their aim, may be the source of serious complications for both male and female. In some individuals an idiosyncrasy exists for soft rubber. These extraneous bodies are apt to produce considerable irritation, terminated in purulent catarrh and its consequences, ascending infection of the uterine appendages, and urethritis in the male. Genital organs, which previously have been subjected to gonorrheal infection, are especially prone to serious affections from this source. Latent gonorrhea may become virulent and acute owing to the presence of the extraneous body. If rubber caps are used at all, they should not be left for any length of time inside the vagina, as is the usual practice, and strong antiseptic douches are to be used constantly.

Fallacies of Cystoscopy.—Dr. Louis E. Schmidt, in a paper on this subject, directed special attention to the error of diagnosing cystoscopic burns as idiopathic ulcers. He has seen not only diagnosed, but even demonstrated, such burns as ulcers. While the inexperienced cystoscopist is more apt to burn the bladder, he is liable for the same reason to misunderstand and misrepresent these burns. The experienced man will easily recognize them because of their location and the lack of inflammatory reaction in their neighborhood. Furthermore, there is a decisive test, namely, the burns heal up inside of ten or fourteen days without any curative influence, which is never the case in actual ulcers. There are general conditions in the way of examination which are apt to influence the reliability of determining cystoscopic findings. If the bladder be distended with air, there is such a shining appearance of the mucosa that the multitudinous and various reflexes make it quite difficult to find out exactly about the details. This condition is increased during an extended examination through the urine which flows down out of the ureters. Another complication may arise from not working with an appropriate optical apparatus. It must not be forgotten that the total examination of the bladder furnishes combination pictures only. A proper optical apparatus enlarges the field of view, and this is one of the prominent features of Nitze's cystoscope. Pictures derived from the observations through a cystoscope of direct view, and without the view being enlarged with an optical apparatus are apt to lead to misconstructions, because they are combined out of views of very small areas.

Weekly Bulletin of the Health Department.—The deaths reported for the week ending April 19th were fewer in number than for the corresponding week of 1901. The total 529 was thirty-three less than for the preceding week and twenty-two less than for the week of the year before. There is nothing, however, in obvious conditions to warrant the hope that this reduction will continue. On the contrary, the type of many diseases is assuming a more severe character; smallpox, especially, which has heretofore been very mild—only one death in 139 cases since January 1st—is taking on the old-time typical form, with pronounced initial symptoms, profuse eruption and high secondary fever. Five out of the eleven cases discovered during the week, including one from Iowa and one from New Jersey, are of this severe type. Similarly as to diphtheria and scarlet fever, the latter being particularly malignant and still spreading. There is gross carelessness not only on the part of parents, but in asylums and hospitals in respect to this red pest, and investigations now being made by the Department may lead to the revocation of the licenses of some of these institutions. There were 173 cases reported last week and there have been 196 deaths since the first of the year as against only fifty during the first 109 days of 1901. If Noah Webster were still alive he would find much in present conditions to strengthen, if not to prove, his contention concerning epidemic and pestilential diseases. The great lexicographer in 1799 published a work on this subject in which, beginning with the mention in the fifth chapter of Exodus of the bubonic plague in Egypt, he collates the various epidemics of Asiatic cholera, bubonic plague, influenza, measles, scarlet fever, smallpox, typhus and yellow fever, down to the close of the eighteenth century, with the appearance of comets, earthquakes, volcanic eruptions, periods of drought and of flood and other "phenomena of the physical world which precede and accompany such epidemics." Every one of these phenomena has been in evidence during the last twelve months. Unexpected comets in bewildering number, earthquakes in every quarter of the globe, volcanic eruptions, tidal waves and inundations, unprecedented drought over vast areas with equally unprecedented precipitations over other regions, have combined to make this period a marvel even to "the oldest inhabitant." And during this period, as recited in previous Bulletins, smallpox has been more prevalent than at any time in the last thirty years, Asiatic cholera, bubonic plague, pneumonia, scarlet fever and other pestilential diseases have been or still are epidemic in many parts of the world. The last word has not yet been said on the "epidemic constitution of the atmosphere" and there may be more in the theory than modern medicine has yet learned. But it has learned that no amount of cosmic disturbances will cause smallpox in a properly vaccinated person; it has learned that the spread of scarlet fever will continue so long as its subjects are allowed to mingle with others while yet "scaling"; that pneumonia is a dangerously contagious disease which demands isolation and disinfection only less urgently than smallpox itself; that the "great white plague" is an essentially controllable disease; that Asiatic cholera, typhoid fever and much acute intestinal disease can be here in Chicago all hydrant water for drinking purposes certainly avoided by drinking only pure water, and that should be boiled at the present time.

CANADA.

Personals.—Surgeon Lieut.-Col. F. W. Campbell, Montreal, has just received from the Militia Department at Ottawa his "officer's" long service decoration. Dr. Campbell has been forty-three years in the Militia Service of Canada.—Dr. John Stewart of Halifax, N. S., who is to read the Address in Surgery at the coming meeting of the Canadian Medical Association in Montreal, has been appointed secretary of the Medical Society of Nova Scotia in succession to the late Dr. W. S. Muir.—Dr. David Shirres of McGill University, Montreal, has received the appointment of professor of nervous diseases in the University of Vermont.—Dr. A. E. Randall, Truro, Nova Scotia, has started collecting a Muir memorial fund to establish a hospital in memory of the late Dr. William S. Muir.—Dr. D. H. Morgan, a graduate of Trinity Medical College, 1897, has recently been appointed assistant dermatologist in the New York Post-Graduate Medical School.

Canadian Bacteriological Station.—The Government Bacteriological Station, which for the last three years has existed at Montreal under the direction of Professor Adami of McGill University, has been ordered closed by the Department of Agriculture. For that space of time scientific observations have been conducted there regarding tuberculosis in cattle. Now the bacteriologist, Dr. Higgins, has been removed to Ottawa and has been attached to the cattle quarantine staff. These investigations will henceforth be conducted at Ottawa; and it is not unlikely that the scope of the researches may be extended to tuberculosis in human beings, but no definite plans for the future have yet been made.

Montreal Western Hospital: Quarterly Meeting.—The regular quarterly meeting of the Board of Governors was held last week. The resignation of Dr. H. L. Reddy, one of the members of the attending staff, was accepted and the Doctor was appointed on the consulting staff. Dr. W. Grant Stewart was appointed on the attending staff as his successor.

Montreal's Powers in Dealing with Infectious Diseases.—At a meeting of the Hygienic Committee of Montreal last week, Alderman Ames, who takes a deep and active interest in all matters pertaining to the health of that city, stated that he had consulted with the City Attorney regarding the powers of the local board of health in dealing with persons affected with infectious diseases as regards sending them to hospital. The City law officer gives it as his opinion that if a patient be residing in a hotel, boarding-house or tenement containing more than one family, a vessel, railway car or carriage, the sanitary authorities are empowered to remove that patient and place him in a hospital, but this is not the case when a patient resides in a self-contained house. As Montreal has recently had trouble with regard to removing certain smallpox patients, and as the law now stands they cannot compel the removal of any one residing at his home, other than as above, it is altogether likely that the Montreal Board of Health will seek power from the Provincial Board of Health to enact a by-law which will empower them to enforce the removal of such patients. The question of cost to the city in these cases is a vital one, as a patient can be attended in hospital for half the amount required to treat him in his own home.

Diseased Immigrants Entering Canada.—This vital question was discussed in the Dominion House of Commons during the past week. During the discussion the Minister of the Interior, the Hon. Clifford Sifton, whose department has charge of immigration, stated that he had recently caused an inquiry to be made respecting certain extravagant statements which had been made with regard to the dumping of immigrants into Montreal, through the same having been refused passes into the United States by officials of the American Government stationed in that city. It had been stated that there were two hundred diseased immigrants in the hospitals of Montreal. To refute this the Minister produced letters from the superintendents of the Montreal hospitals, which went to show that in the Notre Dame Hospital there had been two cases in January, two in February and six in March; there had been none in the Royal Victoria for six months and none in the General for three months. The Hotel Dieu had seven patients of this character. Of 25,000 who had come into Canada, 132 had been rejected by the United States officials, and of this number only twenty-nine had remained in this country, the balance having been deported to their native countries.

Lunatics in Jails in Ontario.—The Mayor of Toronto and the Provincial Secretary of Ontario have crossed swords on this very important question. There are said to be forty lunatics in the Toronto Jail alone and as many more in other jails throughout the Province. Although the Ontario Government has recently provided increased accommodation for insane persons, the conditions still prevail as regards these inmates of the jails. Apparently it looks as though the provincial authorities desire to foist upon the municipalities who must provide for their care and maintenance all those who are committed to the common jails on the charge of lunacy, and that for such cases the municipalities should provide a house of refuge. As the hospitals have refused to care or treat these cases, the question is likely to soon become one of practical politics.

Canadian Tuberculosis Conference.—The annual meeting of the Canadian Association for the Prevention of Tuberculosis was held at Ottawa on the 17th and 18th days of April with Sir James Grant presiding. Prominent medical men were present from Montreal, Toronto, Winnipeg and Victoria, B. C. On the evening of the 17th Dr. S. A. Knopf of New York delivered an address, as did also the Governor-General, Lord Minto. The report of the Committee on Organization recommended the formation of a central organization at Ottawa and the appointment of an efficient paid secretary. The Committee on Legislation pointed out the urgent need of preventive measures, in view of the fact that there are between thirty and forty thousand consumptives in Canada with an annual death-rate of 9,000, which is equivalent to one in six hundred and fifty of the population. It was recommended that Federal and Provincial Governments be asked to grant financial aid towards the establishment of sanatoria. It was also further recommended that active measures be taken to guard against the introduction of immigrants into the country suffering from tuberculosis. The Committee on Hospitals recommended that all general hospitals receiving public aid should make due provision for the accommodation of tubercularized patients. Dr. J. H. Elliott, superintendent of the Muskoka Cottage Hospital, was present and stated that on the 21st of April the Free Consumptive Hospital at Muskoka would be opened and would be able to accommodate fifty patients, and that in the near future it would be extended to accommodate at least one hundred. Mr. W. C. Edwards, M.P., was elected to the presidency of the Association and Dr. H. B. Small of Ottawa was made honorary secretary.

GENERAL.

Cholera Spreads in Manila.—The hottest sort of weather prevails in Manila and cholera is increasing. The transport Hancock, with a battalion of the Tenth Regiment, has been quarantined, owing to one death from cholera.

Association of French Physicians of North America will hold their first general conference at Quebec in June, 1902. French will be the only official language of the conference, to which physicians of the United States are invited.

Institutes for the Study of Cancerous Diseases.—The city of Frankfort-on-the-Maine has decided to create an Institute for the Study of Cancerous Disease; 500,000 marks will be devoted to this purpose. Prof. Ehrlich, at present director of the Institute of Experimental Pathology, will be placed at the head of the new Institute and all researches will be directed by him. A laboratory for the study of cancer, at the Charité in Berlin will be equipped by the German Government, and 150,000 marks have been assigned to the erection of an institute for the study of that disease.

American Medical Association.—The fifty-third annual session of the American Medical Association will be held at Saratoga Springs, New York, June 10-13, 1902. This Association was organized in 1847 and is the only representative National organization of the one hundred and twenty thousand regular practitioners of medicine and surgery in the United States, having affiliated State and Territorial societies in every State and Territory of the Union, and county societies in a very large proportion of all the counties. It has steadily grown in influence and wealth, owns a spacious and costly building in Chicago where the business headquarters are located, and where it publishes weekly its journal of medicine and surgery which has the largest circulation of any medical periodical in the world. The annual meetings of this large body are held in regular rotation in different sections of the country. When north of Mason and Dixon's line the time selected is between the first and the fourteenth of June; and when held in the South two or three weeks earlier than this period. The session at Saratoga will be the fifth time in its history that the Association has been entertained in the Empire State. In 1853, '64 and '80 in New York City, and once in Buffalo, in 1878. Of the fifty-two Presidents of the Association, seven have been chosen from New York State. Dr. Alexander H. Stevens of New York City, elected in 1848; Dr. Alden March of Albany, N. Y., elected in 1863; Dr. J. Marion Sims of New York City, elected in 1875; Dr. Lewis A. Sayre of New York City, elected in 1880; Dr. Austin Flint of New York City, elected in 1884; Dr. Edward Mott Moore of Rochester, N. Y., elected 1890; Dr. John A. Wyeth of New York City, elected in 1901.

Virchow's First Outing.—Virchow took his first drive on March 23d, going directly to the Pathological Institute of the Charité. The patient was able to leave his carriage and, walking with a cane, went to his workroom. His gait is becoming steady and his general condition is excellent.

St. Louis Medical Society of Missouri.—This Society held a meeting on Saturday evening, April 19, 1902. The program included "A Clinical Study of Amebic Dysentery, with a Report of Ten Cases," by Dr. H. L. Nietert; "Endemic Amebic Dysentery," by Dr. Jesse S. Myer; "The Pathologic Findings in Amebic Dysentery," by Carl Fisch.

Moses Taylor Hospital.—Two appointments are to be made to the house staff of the Moses Taylor Hospital, each for one year's service, one beginning July 1st, 1902, the other January 1st, 1903. Examinations for the above appointments will be held in the Hospital Building May 2 and 3, 1902, at 9 A.M., and will be written, oral and practical, on Anatomy, Surgery, Practice of Medicine and Materia Medica. Candidates must make written application to the Superintendent and accompany the same by at least two letters of recommendation as to moral character, etc., one of which must be from a physician. Each member of the house staff is to serve six months as senior surgeon, during which time he will receive a salary of $25.00 per month. The Moses Taylor Hospital is located at Scranton, Pa., and operated under an endowment from the Moses Taylor Estate for the benefit of the employees of the Delaware, Lackawanna & Western Railroad Company and the Lackawanna Iron & Steel Company. It has eighty-six beds, and the duties of its house staff consists largely of medical, surgical and dispensary work.

Birthday of Dr. Kussmaul.—On February 22d Adolf Kussmaul, who for forty years was professor of clinical medicine in different German universities, celebrated his eightieth birthday at Heidelberg, where he has lived in retirement since 1895. Additional interest is given to this anniversary by the recent publication of the octogenarian's youthful reminiscences in a volume entitled "Jugenderinnerungen einer alten Aerztes" (Stuttgart: Bonz & Co.). This autobiography is not only an exceedingly entertaining record of a remarkable career, but also a valuable contribution to the history of the evolution of academic instruction and scientific research, especially in the department of medicine, during the first half of the nineteenth century. Kussmaul's father began life as a poor Suabian peasant boy, and rose to the position of a very capable country doctor with a high average of general culture, gentlemanly manners and fine social qualities rare in a person of such an origin. The son inherited these traits of character, as well as a predilection for the healing art, which he was able to foster under more favorable conditions. His name Kussmaul (Kissmouth, or, more literally, Kissmuzzle) did not tend to promote his advancement, and never failed to excite the astonishment and hilarity of his North German colleagues and acquaintances. As a student he bid in at an auction a volume of Béranger's "Chansons," and, on mentioning his name, was rebuked by the auctioneer for indulging in ill-timed jests. In Baden and Alsatia, family names implying osculation are by no means uncommon. It is said that at a ball in Carlsruhe the three most prominent persons present were two gentlemen, Kuss and Kussmaul, and a young lady named Küsswieder (Kissagain). When urged by a friend to change his name, he refused to do so, on the ground that few persons could show such an ancient and illustrious pedigree as his, averring that it could be traced back fifteen centuries to the famous Oribasius, physician in ordinary to Julian the Apostate, who, after the Emperor's death, suffered banishment and took refuge among the Goths on the Danube, where he was called Kussmaul. This fictitious etymology was accepted as a good joke even by philologists. Kussmaul's humor found expression in genial verses written before his exclusive devotion to science; these were afterwards printed for his friends as "The Puerile Poetic Pecadillos of Dr. Oribasius," and several are published in his autobiography.

Mississippi Valley Medical Association.—The Chairman of the Committee of Arrangements for the Twenty-eighth Annual Meeting of the Mississippi Valley Medical Association, Dr. A. H. Cordier, has announced the dates of the next meeting in Kansas City, Mo., as October 15, 16, 17, 1902. The President, Dr. S. P. Collings of Hot Springs, Ark., has announced the orators for the meeting, Dr. C. B. Parker of Cleveland, O., to deliver the address in Surgery, and Dr. Hugh T. Patrick of Chicago, the address in Medicine, selections which will meet with the approval of every physician in the Mississippi Valley. A cordial invitation is extended every physician in the United States, but especially of the Valley, to attend this meeting and take part in its proceedings. Titles of papers should be sent the Secretary, Dr. Henry E. Tuley, 111 West Kentucky Street, Louisville, Ky., at as early a date as possible to obtain a favorable place on the program.

Preliminary Program, Medical Association of Missouri.—Forty-fifth Annual Session is to be held at St. Joseph, Mo., May 20th, 21st and 22d, 1902. The following program is arranged: C. H. Wallace, Chairman, St. Joseph, Report on the Progress of Gynecology; O. Beverly Campbell, Chicago, A Plea for the Conservation of the Uterus in Pelvic Inflammation; H. E. Pearse, Kansas City, The Methods of the Control of Hemorrhage, and the Removal of the Pelvic Tumor; R. T. Sloan, Chairman, Kansas City, Report of Committee on Progress of Medicine; Charles Geiger, St. Joseph, Cellulitis; William Porter, St. Louis, The Care of Tuberculosis in the Home; F. H. Mathews, Liberty, Laboratory Diagnosis; T. E. Potter, St. Joseph, Tubercular Peritonitis; C. A. Mitchell, Blythedale, Senile Degeneration; C. W. Watts, Fayette, Auto-phagism and Auto-intoxication; M. D. Schmalhorst, St. Louis, Dyspepsia: A Study of the Gastric Functions Essential to Treatment: report of five cases; J. D. Griffith, Kansas City, President's Address; Jabez N. Jackson, Chairman, Kansas City, Report of Committee on Reorganization; D. C. Gore, Chairman, Marshall, Report of Special Committee on Medical Legislation.

Second Day: Bransford Lewis, St. Louis, Presentation of Ureter Cystoscopes for Male and Female; T. C. Witherspoon, St. Louis, The Causes of Appendicitis; A. H. Cordier, Kansas City, Some Clinical and Operative Phases of Appendicitis; G. Wiley Broome, St. Louis, Has Prostatectomy Come to Stay? John D. Seba, Bland, Report of a Case of Fatty Tumor, with Specimen; C. M. Nicholson, St. Louis, Removal of Tumor of the Liver, with Presentation of Patient; J. W. Perkins, Kansas City, Intero-scapulo Thoracic Amputations, with exhibition of specimen; C. J. Morrow, Kansas City, Surgical Procedures in Strictures of the Rectum; John Punton, Kansas City, Cerebral Softening; Its Diagnosis and Treatment; Carcinoma Symposium: Opened by F. J. Lutz, St. Louis; Etiology: Roswell Park, Buffalo, N. Y.; N. Senn, Chicago; Robert C. Atkinson, St. Louis, Report of Committee on Progress of Pediatrics; A. H. Ohmann-Dumesnil, St. Louis, Some Cases of Diseases of the Nails. Two of Koilonychia.

Third Day: Report of Committee on Nominations; E. W. Schauffler, Chairman, Kansas City; Report of Committee on Medical Ethics, A. W. McAlester, Chairman, Columbia; Report of Committee on Medical Education; John D. Seba, Bland, Medical Education; M. A. Goldstein, Chairman, St. Louis, Report of Committee on Laryngology; Hal Foster, Kansas City, The Subcutaneous Use of Paraffin in Deformed Noses; H. W. Loeb, St. Louis, Nose Bleed; M. F. Weymann, Chairman, St. Joseph, Report of Committee on Ophthalmology and Otology; George E. Bellows, Kansas City, The Pupil as an Aid in Diagnosis; J. E. Jennings, St. Louis, Eye Strain; Its Causes and Treatment; W. L. Kenney, St. Joseph, Cancer of Eyelids Treated by X-Rays, presentation of patient; J. W. Sherer, Kansas City, The Evolution of the Eye; M. F. Weymann, St. Joseph, Demonstration of a Bandage for Eye and Mastoid Dressings; E. A. Donelan, St. Joseph, The Importance of Medical Examiners for Schools; R. O. Cross, Kansas City, The State's Duty in the Matter of the Prevention of Pulmonary Tuberculosis; C. C. Hurst, Salisbury, Etiology of Disease, Germ or otherwise; Frank G. Nifong, St. Louis, The Active Principle of Quackery.

Disposal of Sewage.—A year ago, says the "Evening Post," the Sewage Commission of Connecticut planned the establishment of a plant for testing bacterial purification of sewage in septic tanks. The Commission was deterred, however, partly by the expense and partly by ascertaining the fact that Professor Kinnicut of the Worcester, Mass., Institute of Technology, an expert on the subject, had established a plant for the purpose. The results of a year's experiments of Professor Kinnicut are now made public in the annual report of the Commission published recently, which characterizes them as "a substantial contribution to the world's knowledge of the subject," and as showing "exactly what it is that takes place in the septic tank, that feature of sewage disposal works which has been so much discussed of late, and in regard to which so little can be said to be positively understood." The sewage treated was the ordinary city sewage of Worcester. The tests indicate that (1) about one-fourth of the solid matter is removed by the septic tank; (2) that the tank removes a large amount of iron from acid iron sewage; (3) that 25 per cent. of suspended matter was removed, which is much less than that removed from sewage, with less manufacturing waste; (4) that 21 per cent. of soluble matter was removed; (5) that temperature had nothing to do with the organic matter removed, while gas evolved is less in winter than in summer; (6) that the amount of gas depends upon the sludge at the bottom of the tank; (7) that the sludge contains less organic matter in autumn than in the spring; (8) that the crust contains much more organic matter than the sludge, and that the crust is an incident rather than result of bacterial action.

Fourteenth International Medical Congress.—All communications from American physicians concerning the business of the Congress should be addressed to Dr. J. H. Huddleston, New York Academy of Medicine.

Obituary.—Dr. Nathaniel M. Freeman, eighty-one years old, who had practised medicine in the Yorkville district, New York City, for more than forty years, died suddenly last week of heart disease, in the Aschenbroedel Verein.

OBITUARY.

DR. MEREDITH CLYMER.

The death of Dr. Meredith Clymer at the age of eighty-five, removes from the medical profession one of the oldest and ablest of those men who for half a century have been making New York a center of medical science. When Dr. Clymer was in the prime of life he was known as one of the distinguished physicians of the city. The leading journals published his articles, and his books were standard text-books. That his name belongs to the past in no wise signifies that he had outlived his reputation; but rather that he was more fortunate than his peers in living to the age when he could see the younger school of men profiting by the advantages and building upon the foundation which the energy and ability of their fathers had laid for them.

Dr. Clymer came of an old and patriotic family. His grandfather, George Clymer, was one of the signers of the Declaration of Independence, as a delegate of the Pennsylvania Assembly. His maternal great grandfather was Reese Meredith, a wealthy Quaker merchant of Philadelphia, who in 1778 gave General Washington $5,000 with which to feed and clothe the patriot army at Valley Forge; and who was also one of the founders and original trustees of the Pennsylvania Hospital.

With this ancestry it is not surprising that Dr. Meredith Clymer should himself be a patriot and an ardent supporter of medical education. His student days were spent at the University of Pennsylvania where he was graduated in 1835. Two years later he took his doctor's degree, and then pursued his studies in Dublin, Paris, and London. He practised his profession in Philadelphia for ten years, during which time he was consulting physician to the Philadelphia Hospital; physician in chief to the Cholera Hospital in that city, and professor of the practice of medicine in the Hampden-Sidney College at Richmond, Va.

He came to New York in 1851 and became professor of the practice of medicine in the University of New York. During the civil war he was a surgeon in the United States Volunteers, President of the Examining Board of the Army, and in 1864-65 Medical Director of the Department of the South.

Dr. Clymer was one of the first men to specialize in neurology. In 1871 he was made professor of mental and nervous diseases in Albany Medical College, and for many years he was associate editor of the *Journal of Nervous and Mental Disease.*

His presence in many medical and scientific societies added dignity to them, and the fact that he was one of the five honorary members of the Association of American Physicians shows the esteem in which his associates held him.

It is not only the men whose names serve as landmarks in medicine that are great. As great are they, who, though discovering no one secret of Nature, yet have mastered all previous discoveries and placed their knowledge at the service of mankind. As a type of the able professor, physician, and specialist, Dr. Meredith Clymer will be remembered by the men of middle age who in their youth called him great, and the cities whose sick he served will count him among their citizens of honor.

CORRESPONDENCE.

THE MEDICAL DEPARTMENT OF TULANE UNIVERSITY OF LOUISIANA.

To the Editor of the MEDICAL NEWS:

An article in the MEDICAL NEWS of March 15th, giving a sketch of the Medical Department of Tulane University of Louisiana, properly observed that the Medical College of Louisiana, which was the germ of Tulane University, was in large part the outcome of the enthusiasm and energy of Dr. Thomas Hunt. It was in recognition of his lifelong devotion to science and to the cause of education that he was made, when after the Civil War the institution was revived and the University organization restored with fresh zeal and vigor, president of the University. The necessary funds were obtained by him from the Legislature. He was third in the line of presidents, the first having been Francis Liston Hawks, D.D., LL.D., a native of North Carolina, a scholar and an orator of great power who in his time was the Apollos and Boanerges of the pulpit of the City of New York.

The Act of 1834 establishing the Medical College of Louisiana grew out of the devoted efforts of Dr. Hunt and was inspired by his zeal and by immediate association with him. It was he who gave to the Hon. Preston W. Farrar, the legislative author of the charter of the University, that instrument. The Act establishing the Medical College secured to it the corporate powers which made it independent and under which the College was enabled within the time of Dr. Hunt himself to reach the third place in the number of its students of the Medical Colleges of the country. The honor of founding the first chair of special pathological anatomy in the United States belongs to the Medical College of Louisiana. The College achieved not only national, but also foreign reputation. Its degree of doctor of medicine was recognized in Paris, the leading center then, if not now, of medical science, as a certificate of real merit and attainments.

It is still more important to note that the standard for graduation was probably as high as anywhere else in America—so high in fact that the degree was denied when there were two votes adverse to the candidate cast in the Faculty.

As soon as instruction in the College was resumed on the termination of the war, Dr. Hunt laid before the Faculty an elaborate plan for enlarging and liberalizing opportunities for medical instruction after the most modern methods.

The founders of colleges and universities are a country's best benefactors. The preservation of their memory is a duty which ought not to be omitted. It is part of the history of the University of Louisiana that it was sustained and advanced in the public policy of the State of Louisiana by the efforts of Dr. Hunt. He appeared in the Legislature of the State, session after session, not as a member of the body but as the well-recognized champion of liberal education. His association with the first men of the State, the disinterestedness of his character, the consideration he controlled, and his position among the public men of Louisiana, together with his attainments as a scholar and as a brilliant orator, caused his frequent addresses to have the greatest effect in attracting public attention and in securing encouragement for the University. Thus it happened that a seat on the floor was given him in the House of Representatives, although he was not a member of the body, and it became his privilege in the department of medical science to assert for Louisiana the place of instructress of the States of the South and Southwest. The essay which he delivered on the "Utility of Science" referred to in the article in the MEDICAL NEWS, to which this is a supplement, was evolved from the more recent addresses of Dr. Hunt and presented the subject with rare felicity and elegance. It was his inaugural address as president of the University.

The present article, the aim of which is historical, may be brought to a close by presenting the monumental tribute to Dr. Hunt inscribed on the walls of the Richardson Memorial College in New Orleans, now the home of the Medical Department of Tulane University of Louisiana.

The Faculty of the Medical Department
of the University of Louisiana
have erected this tablet in memory of
THOMAS HUNT, M.D.,
A founder of the Medical College of Louisiana in September, 1834, who was born in Charleston,
South Carolina, May 18th, 1808,
and died in this City
March 20th, 1867.
He was then third president of the University of
Louisiana and Professor of Physiology
and Pathology in the Medical
Department.
In the loss of Professor Hunt
The University of Louisiana mourns its most gifted and
eloquent teacher, the professor of medicine an accomplished, elevated and independent leader
and science an accomplished and
untiring votary.
He brought to his instructions in physiology the
resources of a cultivated and learned experience;
and his demonstrations in pathological
anatomy, repeated for years in the
Charity Hospital,
conducted by a master imbued with profound knowledge
of the subject and remarkably graceful and
skilful in the use of the knife, constituted a course the most perfect
ever delivered on this
Continent.
The services of Professor Hunt
as the presiding and executive officer of this
Department,
his valuable donations to it,
and the large increase in the resources of the Institution obtained mainly by his energy and his
influence from the Representatives of
the State have entitled him to this
grateful memorial.

A memoir of Dr. Hunt, compiled from authentic data appeared in the *Eclectic Magazine* in the year 1867. Wilson, the author, traced the history of Dr. Hunt, "the intrepid physician of Folly island," and told the story of his going in 1832 to the relief of the passengers and crew of the brig "Amelia" stranded on Folly Island off Charleston Harbor. The cholera had broken out on board the vessel and the sufferings of all on board enlisted the sympathy of Dr. Hunt, who went to the relief of the sufferers at the peril of his life.

It was under these circumstances that he made the acquaintance of Dr. Warren Stone, who became his colleague in the Medical College of Louisiana and lifetime associate, a man of benevolence and genius and an extraordinary surgeon. Dr. Hunt attended Dr. Stone, generously supplied his necessities and sent him rejoicing on his way to New Orleans.

Wilson's sketch of Dr. Hunt describes him as "a fascinating lecturer" and says that the resolution of the Law Faculty of the University on the occasion of his death most fitly describes the general estimate throughout the community where he lived of the talents and virtues of Dr. Hunt. The resolution in question describes him as "one who was among the highest ornaments of science and letters in this country, a man of varied and extraordinary abilities and of extensive, profound and accurate learning, an elegant and accomplished scholar, a zealous, persistent and efficient advocate and promoter of public education, the founder of the Medical College of Louisiana, an influential adviser and aider in the establishment of the University of this State, a lecturer unsurpassed for eloquence and didactic talent, a citizen of high spirit and exemplary worth and a gentleman universally esteemed for his private virtues." F. G. Freret.

FOREIGN SOCIETIES.

German.

META-ANILID OF ARSENOUS ACID—SYPHILIS BACILLI—NEW BACTERIA IN THE SPUTUM—ADENIN IN AN ANIMAL ECONOMY—HYDROTHERAPY IN ISCHIAS—LIGHT AS A CURATIVE AGENT—CHANGES IN THE BLOOD DURING HYDROTHERAPEUTIC TREATMENT—ABSCESS OF THE LUNG.

The following important German societies have held meetings. **Schild**, at the Berliner medicinische Gesellschaft, March 5, 1902, stated that instead of the subcutaneous injection of arsenic, which is painful, and instead of its substitute, cacodylic acid in the same method of administration, which, while free of pain, gives an objectionable odor of garlic to the breath, he has been using the meta-anilid of arsenous acid. This preparation has no disagreeable after-effects and may be given in rather large doses. In a somewhat long list of diseases of the skin, for example, lichen ruber, xanthoma diabeticum and psoriasis, he has employed it with satisfaction and success at Lassar's clinic.

M. Joseph and **Piorkowski** discussed the subject of the specific germ of syphilis. Joseph inoculated the sperma from syphilitic subjects on *Plazenten.* Under ten hours there were small colonies similar to dewdrops, which after twenty-four and forty-eight hours had much increased. These were then transferred to the ordinary culture media and always grew luxuriously. The same observer took sperma from subjects who were not syphilitic, but obtained no cultures on the *Plazenten.* Inoculation of agar with the sperma gave no bacilli. The bacillus appears to show agglutination. It certainly had a strong tendency to group itself into small balls or clumps, and, after being thinned down to one part in thirty of serum from syphilitic subjects, this grouping became more apparent. In fresh azoosperma from syphilitic subjects no bacilli were found, but in such subjects they were present in the blood. If the sperma was sterilized then nothing grew on the *Plazenten.* The observer does not claim anything fixed or definite in these experiments as to the causative relation between this bacillus and syphilis. He offers it, however, as a contribution to the subject. Piorkowski corroborated the views which his colleague in the work expressed.

Lichtenstein, at the Verein für innere Medicin in Berlin read a paper concerning a new bacterium recovered from the sputum having the following characteristics: The patient was one of Von Leyden's, in whom the question of tuberculosis was present. On account of the clinical bacteria which he presented, Von Leyden said that he did not have tuberculosis, and the characters of the bacteria, which although stained with acids did not decolorize with alcohol and did not cause disease in guinea-pigs, tended to establish the correctness of this view. The fifty-year-old, muscular patient had suffered for a year with cough, sputum, and hemoptysis. Examination showed dulness, bronchial breathing and a few râles. The physical signs remained with few alterations while the general condition of the patient improved. During the year setbacks occurred with frequent profuse bleedings. In December of last year he had his last bleeding. In spite of these frequently recurring accidents there did not seem to be any progressive loss of general strength. Elastic fibers and lung fragments were absent from the sputum. In addition to staphlococci and streptococci there were the afore-named acid staining bacteria. They are longer and thinner than the tubercle bacillus and lie for the most part in large bunches. During a ten-minute exposure to a 15-per-cent. nitrate acid dye, they were not stained, while they were quickly stained by alcoholic solutions. Guinea-pigs were not inoculated by them with tuberculosis. Just what kind of bacteria these are he could not say, because pure cultures had not yet been obtained. Von Leyden said that this case gives a good example of the importance of the practical distinction between pseudotuberculosis bacilli and the true. Aside from not knowing the kind of bacteria present he called the case one of fibrinous bronchitis.

Nikolaier presented a paper concerning the development of adenin in the animal economy. This substance has been discovered and described by Kossel, which he found most abundant in the thymus gland. Minkowski injected it into the bodies of animals and through it found in the kidneys peculiar yellow bodies which were striated radially and seemed to be uric acid. Nikolaier has given the same substance subcutaneously and found these same concrements in the kidneys and the bladder. On account of the numerous and repeated experiments upon white rats, he thinks that they are formed not out of uric acid, but of 6-amino-2:8-dioxypurin.

Brieger, at the Gesellschaft der Charité-Aerzte in Berlin, February 27, 1902, discussed the relation between hydrotherapy and ischias, noting the cures he had obtained in neuralgias, and especially in this form, ischias, by means of the newly-established hydrotherapeutic institute of the University. Cases which had persisted for a year and under treatment without result were cured by water, with movements and massage. The method employed was the alternating application of cold and hot streams in the form of the Scottish douche, and also full body baths at a temperature of 38° C., during which passive and active movements of the legs and trunk were carried out. The end result was that the pain and cramps were quieted by the hot water and the massage stimulated the parts to recovery.

Krebs read a contribution on the subject of light as a therapeutic agent, stating that chronic rheumatism and neuralgia have been successfully treated in his hands by sun or light baths. The improvement was probably due to the action of light upon the perspiration. Special reference was made to the comparative influence of white, blue and red light upon the mind of the patient, and also because of the fact that many perspired in a shorter time and at a lower temperature under them than under the other colors. The refracted rays of the blue light are an expensive and not especially advantageous refinement. The mode of action of throwing rays by means of reflected lamps depends probably upon the element of heat, as it has also the specifically famous results of refracted rays of light. These may be obtained more actively and satisfactorily by means of steam and massage. The therapy of light cannot be regarded at the present time as a very definite matter.

Laqueur has studied the changes in the blood brought about by hydrotherapeutic treatment, taking his specimens during hot and cold applications from the lower extremities at the point of application and from the lobe of the ear. A distinct difference between hot and cold applications was neither at the point of application nor at the remote points possible to fix. The changes were for the most part slight. Rather regularly at the point of application there was a small increase in the number of leucocytes and at the remote points a decrease. It seems apparent that the efficacy of hydrotherapeutic measures does not depend upon much other than the mere stimulation of circulation.

Lenhartz, at the Aerztlicher Verein in Hamburg, February 18, 1902, described a case of abscess of the upper lobe of the lung in a fifty-two-year-old man upon whom he had operated successfully five weeks before. The patient had been out of doors for eight days preceding his presentation at the Society and was in good condition. The abscess cavity is almost entirely healed, excepting for a fine sinus, which is now granulating up rapidly. There is no discharge, but during coughing air is expelled through it. He hopes to have this sinus closed entirely in a short time. The man presented himself with signs of an acute, fetid bronchitis proceeding from the right upper lobe and under ordinary, conservative, medical treatment at the outset ran down so much that an operation was quickly decided upon. The third rib was cut away and the abscess was discovered in the immediate neighborhood and contained a most fecal and foul-smelling mass of pus. The cavity measured approximately 4 cm. wide, 7 cm. long and extended deeply into the lung. The evacuation reached 270 c.cm., but soon decreased so that for the last two and a half weeks the patient has had hardly any sputum or discharge. The temperature, which before operation was very high, quickly returned to normal. In the medical literature of the world Garré has collected 122 cases of similar abscesses operated on. Added to these are 26 cases reported since Garré made up his statistics, making a total of 148, of whom 94 were cured and 54 died. According to the estimates of Villiere the internal treatment without operation of lung abscess gives a mortality of 75 to 80 per cent. From these records it will be seen that in this new field of surgery the first mortality is only 63.5 per cent., showing that the operative measures are certainly better than the medicinal treatment.

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, Held March 4, 1902.

The President, Joseph Collins, M.D., in the Chair.

A Case of Myotonia.—Dr. J. Ramsay Hunt presented a man, twenty-eight years old, who had come to the clinic with a history of having a peculiar stiffness of the hands and of the muscles of the jaws in the morning. On awakening it was found impossible to open the eyelids to their full extent for a minute or more. This myotonia was aggravated by cold or prolonged rest. There was a consolidation at the apex of one lung in this patient. Strong, stable galvanic applications produced no wave-like contractions such as are sometimes observed in myotonia. The hands were weak; the knee-jerks were difficult to elicit except on reinforcement. The muscles were small and showed no evidence of hypertrophy. The legs were not involved.

Lymphatic Angiomata.—Dr. Joseph Fraenkel presented a man who had symmetrical tumefactions in the pre-auricular space, over the upper part of the sternum, between the upper borders of the shoulders and also in the abdominal wall. The man gave a history of chronic alcoholism. The speaker said that according to the modern conception this disorder was a localized disease of the lymphatic glands and vessels—in other words, a lymphatic angioma. Since the admission of this patient to the Montefiore Hospital he had developed a rather acute tuberculosis. According to the literature, thyroid medication in such cases caused a diminution of the body weight, although the tumors, despite their close resemblance to lipomata, remained unchanged.

Multiple Neurofibromata.—Dr. Fraenkel presented specimens from a patient who had long been in the Montefiore Hospital. The patient was a woman who was thirty-one at the time of her death. Her family history was excellent, and she had been well up to eleven years ago. At that time she had given birth to a still-born child, and claimed that shortly afterward she had developed a tumor on the right side of the abdominal wall. Soon after this the left lower extremity became contracted. On admission to the hospital there were contractures of both lower and upper extremities, and the diagnosis was hysterical contractures. In the later stages she presented the picture of hysterical chorea. There were very irregularly-distributed atrophies and changes in the reaction of the muscles of the upper extremity and in some of the muscles of the lower extremities. There was also total paraplegia. There were no trophic disturbances. At the autopsy a number of tumors, neurofibromata, were found. One of these almost totally compressed the cord. The brachial plexus was the seat of numerous neurofibromata.

Dr. Joseph Collins said that cases of multiple neurofibromata must be extremely rare, as he had just seen his first case of the kind. This patient was a smoker who came to the clinic stating that he had suddenly begun to experience pain in the right arm and shoulder, and that pain and inability were increasing. Twelve years ago he had had a somewhat similar condition, but had recovered from it, and the history indicated that there had been several similar but slighter attacks. Examination showed that the musculospiral, the circumflex and the suprascapular nerves were the ones particularly affected. They were tender on both superficial and deep pressure. Investigation showed no less than seventy tumors in different parts of the body, varying in size from one-fourth to one-half of an inch. Two of these tumors could be felt in the inferior border of the axillary space where the external division of the brachial plexus was situated. It was, therefore, fair to infer that these tumors were similar to those found in the other parts of the body, and by an implication of that trunk had given rise to the pressure neuritis from which the patient was suffering.

Dr. Harlow Brooks said that at the January meeting of the New York Pathological Society a specimen of neurofibroma had been shown. Only the sciatic nerves were involved, and the enlargements were almost symmetrical. There was apparently a complete obliteration of the nerve fibers.

Histrionic Element of Mental Disease.—Dr. Theodore H. Kellogg presented a paper on this subject, which, he said, was not only an interesting topic but of real diagnostic importance. Shakespeare had recognized this by introducing several insane persons into his plays. The acting was involuntary in some and intentional in other insane persons. The maniacal patient was sometimes driven by vivid hallucinations to emotional acting. There was nothing more spectacular than a powerful man wrought up by hallucinations and delusions.

The most persistent and intentional forms were seen in paranoiacs. The theatrical stage afforded nothing more striking than the lunatic leading a crowd of sane persons from their sober avocations into all sorts of vagaries of religious belief. It was the rule that whatever had been attained by laborious effort was generally abandoned in mental disease, and, hence, the professional actor showed no special tendency to acting when insane. A number of cases of erotomania had come under his observation which had been characterized by most persistent acting. Jealousy was one of the most powerful passions, and when it had insane intensity it led to the most tragic performances. Mental patients were prone to mimic those around them most persistently and cleverly. In most large hospitals for the insane were to be found those acting as buffoons for the edification of themselves and others. Malingering rôles were sometimes acted for weeks and months, and sometimes the patient even burlesqued the mental disease. They sometimes dissembled their real symptoms and denied the existence of delusions in order to secure discharge from asylums. It was well understood that prolonged feigning might lead to insanity, but it was not so generally known that unless the histrionic element were repressed it would tend to interfere with the cure of the mental disease. The recognition of the histrionic element as an integral part of mental disease shed light on some obscure phases of mental pathology, and had practical bearings in the prognosis and treatment of mental maladies.

Dr. Lyon said that the author of this paper had enjoyed unusual opportunities for observing insanity in all its forms, and the instances cited were undoubtedly the exceptions rather than the rule. There were not many who act a consistent rôle for any length of time. He had known some of these patients who were trying to act the rôle of a certain personage halt for a moment when confronted with the statement that this was not the true impersonation. He agreed with the reader of the paper that it was well to discourage, without actively combating, these delusions.

Dr. Defendorf said that the paper was exceedingly interesting from a descriptive standpoint. He could not agree with the statement that the histrionic element was of great prognostic and diagnostic value. Such acting was said to be the expression of morbid impulses and that they occurred in connection with grandiose ideas in paranoia, yet in the one class the prognosis was good while in the other it was very unfavorable.

Dr. Ralph W. Parsons described a number of striking and amusing cases illustrating the histrionic element. He said that in these cases the imagination was the predominant element, and that there was often a reversion to the mental state found in children or in primitive races.

Dr. Noble of Middletown, Conn., said that the patients he had met with who had displayed the histrionic element had rarely been consistent; they would not carry out the entire character impersonated as an actor on the stage would do. Whether this was because of deficient knowledge of the character impersonated or because of a deficiency in histrionic ability he could not say. He had always looked upon this element as unfavorable, probably because it was so largely seen in paranoiacs.

Conditions for Psychiatric Research.—Dr. Adolf Meyer read this paper. He spoke of the founding of the New York Pathological Institute of New York State and of the causes which had led to the failure of this work. He said that he had hesitated long before accepting the present unenviable position and the task of reorganizing this institute and making it more generally useful. He had been told that the hospitals for the insane would not receive what they most needed if the institute began its work with research. The scientific spirit in the hospitals should be stimulated and fostered in every way possible, and hence clinical and pathological work should be done as far as possible in these hospitals under the supervision of the institute. The central institute should offer to the hospitals advanced instruction in clinical psychiatry. The central institute should not, however, abandon original research. The safest starting-point was undoubtedly actual experience. The pathologist of the hospital for the insane had found himself hedged in by narrow routine and the hospital staff so engrossed with routine work as to have no time or inclination for original scientific investigation. The speaker then went on to point out many of the inaccuracies of symptomatology and the shortcomings ot histology as applied to psychiatry. In his opinion, the staffs of the hospitals for the insane were entirely too small to do their work well. Psychiatry knew little as yet of diseases, as that term was used in connection with other parts of the body—in other words, it knew little of pathological entities. In no other field of medicine were absolutely accurate records so useful as in psychiatry, yet where were such records to be found? The effort of the present day should be to improve the records and do away with the prevalent impressionist method. Dr. Dent of the Manhattan Hospital had agreed to give the necessary clinical material for a start, and a chemical laboratory and a histological laboratory for study in clinical psychiatry would be established, and, in time, a psychological department would be added. All those in charge must be physicians especially interested in psychiatry. The assistant physicians in all the hospitals should be encouraged to do good work according to the recognized modern scientific methods. The new movement must be a natural outgrowth of the present conditions.

Dr. Lyon thought the workers in the hospitals for the insane would very generally welcome such help as had been offered in outline in this paper. He had long felt that clinical and laboratory work should be practically united.

Dr. Smith Ely Jelliffe congratulated the reader of the paper and pledged his hearty coöperation. He said that he knew the stress of work laid upon the hospital interne and sympathized with him, and for this reason he thought the suggestions contained in this paper were most judicious.

NEW YORK ACADEMY OF MEDICINE.

Section on Pediatrics.

Stated Meeting, Held April 10, 1902.

Roland G. Freeman, M.D., Chairman.

Specimen of Sarcoma of the Lung.—Dr. Louis S. Fischer presented a specimen showing the presence of sarcomatous growth in the pulmonary tissues of the left side. There was no syphilis or tuberculosis in the family history and no clinical signs of either of these conditions in the child. Punctures had been made on several occasions and only serous fluid was obtained. There was marked dulness over most of the left chest and the cutaneous veins were very widely engorged. This showed that a condition of considerable mediastinal pressure existed. The tumor seemed to show a certain tendency to point and when the child was examined in Hamburg the diagnosis of the presence of pus in the swelling was made, but on puncture only serous fluid was obtained. The heart was displaced over into the right axilla and the apex beat could be felt below and to the right of the right nipple. The temperature was at times considerably above normal and ranged from 100 to 101.2° F. There was cyanosis of the fingers and very marked cyanosis of the lips. The child suffered from a severe form of anemia. The X-rays showed the heart-well on the right side, but did not disclose much about the tumor. The difficulty in the use of the X-rays was that the child's restlessness did not permit of the taking of a radiograph in which the requisite definition could be secured. The patient's general condition suffered very much. For nearly a year the child had been compelled to sleep sitting up and had become so very nervous that it trembled even at the slightest touch. A marked hyperesthesia also developed and made life very miserable for the child. The patellar reflexes were considerably exaggerated as were also the plantar reflexes. The child's digestion was reasonably good, though swallowing was rather difficult and it was fed on concentrated food. The bowels were sluggish and the urine about normal, containing neither sugar nor albumin. As the child's condition constantly grew worse, an operation was performed. The child bore the anesthetic very badly and died shortly after the operation. On autopsy the tumor was found to be a sarcoma of the spindle-celled variety and in a very active stage of growth. These tumors of the spindle-cell type are quite rare in children. It seems probable that the tumor was a primary sarcoma of the lung.

Vaccination Packet.—Dr. B. Van D. Hedges presented a packet containing all the materials necessary for the performance of thoroughly aseptic vaccination. This packet, though of convenient size to carry in a pocket, contains a small bottle of liquid soap and a small bottle of alcohol. In it there are also a number of small compressed sponges, sterile needles, and a piece of gauze that can be used as a vaccination shield without any of the ordinary inconveniences that attach to the use of shields. The sponges are of the kind that are compressed by hydraulic pressure into very small compass and that swell up and become soft when placed in water. Dr. Hedges has found the usual vaccination shields worse than useless. By undue compression they cause congestion and irritation and lower the resistive vitality of the part. He places in this packet a small piece of sterile gauze which is fastened to the arm by means of adhesive plaster. This protects the parts without causing irritation or undue compression.

Dr. Huddleston thought that the packet presented by Dr. Hedges seems a very desirable combination of the things necessary for aseptic vaccination. The shield suggested by Dr. Hedges seems to him to have none of the objections that vaccination shields generally have. Dr. Huddleston suggested, however, that a sterilized piece of wood should be added to the packet in order to allow of liquid vaccine being rubbed into the vaccination wound. This is important because it insures the taking of the vaccination better than any other means and some absolutely sterile instrument is necessary.

Improvised Shields.—Dr. Crandall said that this form of vaccination shield suggested by Dr. Hedges required the physician to wait too long before he could leave the case. After all a piece of gauze can not be applied directly over the wound until it has become thoroughly dry. This will usually take at least fifteen minutes. At times when vaccinations are frequent this would be entirely too time-consuming. Dr. Crandall employs pads of aseptic cotton. These can be purchased at the drug store and a hole can be cut in one of the pads and will thus form a protection for the wound, but without being applied directly to it. Over this perforated pad a second pad is fastened thus providing a cover through which infected material can not escape. This dressing does not touch the wound at any point. It can be applied immediately after the vaccination if necessary and so there is no waste of time.

Progressive Infant-Feeding.—Dr. Henry L. Coit read a paper on the application of the progressive principle to infant-feeding. He insisted especially on the fact that the development of scientific infant-feeding owed much to American investigators. From the year 1882, when Meigs taught the importance of the adjustment of food to the infant's age and the significance of mother's milk and its various constituents, much has been accomplished. Rotch's work some ten years later constituted the next great step in advance. This involved the use of the laboratory, however, in the preparation of infant-feeding. Westcott's system of percentages for the home modification of milk served to bring this question practically before the medical public. It might have been hoped that these years of study would have produced more general interest. Notwithstanding three decades of special work, however, the general practitioner really takes very little interest in this subject. If, as has been calculated, fifty per cent. of the race at the present time have to be fed artificially from the beginning and since all of the children have to be fed adaptably after the first year, this subject of adaptation of food is extremely important. Dr. Coit, however, has recently had brought to his attention some flagrant examples that show how little up-to-date the general practitioner can be in this particular. He found a child suffering from evident inanition whose family physician had advised the use of milk mixed with gelatin and arrowroot, according to a formula used about twenty years ago. The gelatin was recommended in Meigs and Pepper's text-book following a mistaken notion of Struve. Struve got an idea that as woman was omnivorous and, as gelatin was a substance that contained all the chemical elements that usually go to make up organic compounds, it should form a suitable addition to cow's milk, for the cow is after all only herbivorous. Needless to say, gelatin is not a food.

System of Modification of Milk.—Much of the lack of interest of the general practitioner in this important subject is due to the fact that the systems of modifying milk so far suggested have, as a rule, been too complicated. Simpler methods are demanded. There is no doubt, too, that the endeavor to supply milk of very exact percentage composition is founded on a fallacy. Children are not chemical reagents and ordinary milk must form the basis of infant food, which milk, itself, is not a constant quantity. Ordinary market milk is no more constant in its composition than are uniform the breeds of cows among the dairy herds from which it comes. Milk can not be assumed to be an average product. Even mother's milk conforms to no definite standard. There is but one thing in recent experimental work with milk that has become sure and that is that violent mechanical disturbance of milk as a natural product, such as is accomplished by the violent use of a centrifuge, makes it indigestible. It seems probable that some of the methods suggested for the modification of milk sacrifice too much to the chemical accuracy. There must be a flexibility of modification formulæ in order to accommodate the food to advancing age. Mother's milk is thus accommodated to the age of the child. Nature's prescription is followed in this matter and it is probable that there are differences even for blond and brunette in the matter of milk formation and natural adaptation.

Milk Modification.—The greatest difficulty with regard to the modification of milk for practical use is that when first applied the modification is usually not for a well child, but for a sick one. Feeding charts, as a rule, are made, however, for well babies. Every case, however, must be individualized. Once a month at least formulæ should be modified to suit the child's condition. The progressive principle of food modification is opposed to stereotyped practice. Most patients who come for treatment are suffering from some form of starvation. The use of condensed milk, or of a patent food, has left out of the dietary of the child some important constituent that must be replaced, if the child's health is to be conserved. It is not an infrequent thing to see children of six months of age taking a milk food formula meant for a child of two months. When any special digestive function, as, for instance, that for fats, or for nitrogenous material, is impaired, it must be encouraged to increase its power by gradual additions of that form of food to the diet. Above all it must be remembered that infant dietetics is not as yet a science, but an art. There is a personal equation of judgment that must be used in the application of any set of formulæ. Each child must be treated entirely from the indications furnished by itself and not according to any hard and fast rules. Dr. Coit then described his method of employing 10-per-cent. cream mixtures as the basis for modified milk formulæ and the ease with which various modifications can be made in the different ingredients, so as to suit each individual case.

Child-Feeding During Second Year.—Dr. Thomas S. Southworth said that there is at the present day as much of a pitfall in underfeeding as in overfeeding for children. It is possible for children to have abundant food of unsuitable type, as well as to have too little food of the proper kind. The beginning of the second year represents a transition period from the exclusive milk diet to the mixed diet of the adult. The proverb with regard to the danger of the second summer shows how well the risks of this period are appreciated. During the second year the child develops ten teeth. This must be taken as an indication of the fact that Nature demands variety in food, for the teeth are made ready for the grinding of various forms of food.

Cereal Gruels.—Some form of cereal gruel is now commonly used for the dilution of the milk diet of children under a year old and this helps in the transition from milk to a mixed diet. The dilution with gruel or with gelatin made from some of the grains is undoubtedly an excellent introduction to a starch diet. The choice of the grain to be used in an ordinarily healthy child seems to be a matter of indifference. There are some indications, however, that help in the selection in special cases of a particular cereal. If the child have a tendency to constipation, oatmeal would seem to be the best medium. If, on the other hand, there be a tendency to diarrhea, or eczema or indigestion, oatmeal in any of its forms is likely to be unsuitable. Barley or wheat or hominy may be used and, as a rule, salt should replace sugar in the preparation of these gruels. Rice is an excellent, nutritious, and easily digestible cereal and should usually be given in the middle of the day. Cow's milk must form the basis of the food all during the second year. So much has been said about the dangers involved in the use of the nursing-bottle that many people are tempted to abandon it in the feeding of children as soon as possible. Dr. Southworth does not believe, however, that the bottle should be abandoned until the child is well above eighteen months of age. When children can only with a certain amount of difficulty take from five to six ounces of milk from a cup, they will readily take eleven to twelve ounces through a nipple. The six-ounce bottle for nursing purposes that is ordinarily employed should not be the limit of the milk the infant can take at one feeding and if necessary a twelve-ounce bottle should be procured. Dr. Southworth believes that a child should always be fed about ten o'clock at night and that this feeding should consist entirely of milk taken from the bottle. He is accustomed to direct that the child shall be changed about this hour, given its milk and allowed to sleep. When thus fed children sleep longer in the morning and their sleep is apt to be less disturbed during the night.

Hours of Meals.—Dr. Southworth believes that children should, until their second year, be fed about five times during the day. At 7.30 A.M. they should have their breakfast which should consist of some cereal and a bottle of milk. At 11 A.M. they should have a bottle of milk and a crust of bread. Chewing on a crust is not only excellent exercise for the child's chewing muscles, but it serves to keep the teeth clean and is a stimulant to proper dental growth. At 2 P.M. the child should be given dinner, consisting of an egg and some milk as well as certain vegetables. Less milk should be given at dinner according as the other forms of food are more abundant. At 6 P.M. the child should have supper, at which time besides some bread and butter there should be some preserves, not too sweet, or prunes or baked apples without the skin and a bottle of milk. At 10 P.M. there should be a bottle of milk. The bottle should not be discontinued until after the middle of second year.

Various Food Materials.—A soft-boiled egg may be given on alternate days, but not oftener, lest the child tire of them. Crust of bread, zwieback and the various forms of biscuits, as they are called, are good for the teeth. Broths and bread and milk are old fashioned yet excellent. Orange-juice, avoiding the use of any of the pulp of the fruit, is especially indicated for scorbutic cases and this gives a hint of its employment in other cases. Orange-juice, he believes, should not be given within an hour of the taking of milk. Prunes are a cheap and available form of fruit for children of constipated habit. The skin should be removed and the pulp passed through a sieve. Baked apples, without the skin, with cream and without too much sugar, are an excellent article of diet for children. Very well baked potatoes, especially when ripe and mealy, are readily digested. Screened spinach is a very good vegetable and other vegetables, as peas and beans, may be used on occasions.

Meat and Meat-Juice.—Meats should not be given until the child can chew very well. Meat-juice is very good for children especially if they be suffering from anemia and its employment may be begun toward the end of the first year. According to the needs of the child, from one to three ounces should be given at dinner. There are certain contraindications to its use. Children of very nervous temperament and heredity, or with inherited tendencies to gout or rheumatism, or with eczemic manifestations, should not be allowed meat-juice. Meat soups and broths must also be limited in their dietary. An excess of meat must always be avoided and the amount given must bear a definite relation to the outdoor exercise which the child has. Children must be taught, however, to eat a variety of materials. Caprices of appetite must not be encouraged. Children must not be allowed to hear that some older member of the family was just like them with regard to the refusal of some article of diet when of their age.

Children at Table.—As an absolute rule children should not be allowed to come to the family table, no matter how much parents may wish to gratify their own pride nor how great the children's desire in this respect may be. It is hard, as a rule, to insist that the mother may not "show off" her offspring at table before strangers at the end of dinner, but the permission always leads to serious abuses. The child soon finds out that there are a number of sweet things that are much more palatable than the simple food to which it is accustomed in the nursery and the beginning is made of desires for what is unsuitable. Among the better classes, special regulations must be made with regard to the allowance of sweets for children. None of the cloying desserts must ever find their way to the nursery. With regard to the poorer classes, tea, coffee and beer must be categorically forbidden for children. This may seem unnecessary, but as a matter of fact many of the poorer people seem to consider it proper to allow their children some of these beverages when they come to the table. If milk form the basis of the diet in the second year and if properly-selected foods be added to it, there will be none of the dreaded dangers of the second summer that are so proverbially serious. It is important, however, to individualize the diet of every child. No two children of the same age, even of the same family, will take quite the same things and be benefited by them in quite the same way.

Individuality of Food-Taking.—In discussing the papers Dr. Yale said that the writers had been exceedingly judicious in their remarks with regard to children's diet and especially in the matter of recognizing the individuality of each little patient. As Dr. Northrop said it is the finding out of the "feeding that fits" that constitutes the main duty of the physician. Children during their first year are cared for much more particularly in this respect than in their second year. The older children require, however, just as much care. The result is not so immediately disastrous, but is as inevitable. It is important to inquire very early what are the child's tendencies. Goutiness, as a rule, manifests itself very early in children. The doctor asks himself whether this or that article is good for the child. The mother asks whether it will hurt the child and the impression is that anything that will not hurt must be good. The standpoints are quite different. As Dr. Southworth outlines the diet, Dr. Yale would consider his regulations more suitable for the period from twenty-one to thirty months than for the period from a year up to twenty months. Up to eighteen months, as a rule, the children do not take unmodified milk well. Dr. Yale is timid about the use of potatoes in the early part of the second year, except when the digestion is very robust. When given it should be in the form of potato soup, rather than baked potato. Dr. Yale does not like beef-juice for healthy children. Beef-juice is always a stimulant and not a hygienic food material. It has not more food value than milk. The idea that it is a stimulant should be constantly kept before the mind. If the child be wearied with play, and by experience it is known that it does not digest well under these circumstances, then a little beef-juice may be used for its stimulating effect. Beef-juice must, however, be constantly kept associated in the mind of a physician with tea and coffee, rather than with milk, as solely stimulant not especially nutrient.

Special Regulation of Meals.—Dr. L. Emmett Holt said that often enough children's refusal to take food of various kinds is due to the fact that their meals are served to them improperly. When children refuse to take certain articles of diet or want to go on to their more palatable food almost at the beginning of the meals, these should be served in courses. Not all that the child is going to eat should be put before it at once. This rule should be insisted on when the mother says that the child refuses to take this or that article of food. How often will not the child refuse its cereal when, for instance, it sees the dessert brought on. Dr. Holt does not consider that vegetables should be used much before the child is twenty-one months old. While he considers that the use of the bottle is good for some time after the first year is past, he does not encourage the use of the bottle for quite as long a time as Dr. Southworth does. Children get into the sucking habit. They will not sleep without sucking a bottle. They should be taught early to drink from a cup. For some months after they are on a mixed diet, they may have their bottle at 10 P.M., but should be disciplined to drink otherwise during the day.

Customs of Different Countries.—Dr. Holt has had the opportunity to see some children, who, after having been under his care, were subsequently under the care of English or German physicians. English physicians were horrified at the idea that the mother should be directed to add cream to the child's milk. They consider this a heavy indigestible material. German physicians were horrified at the idea of the addition of beef-juice to the child's diet. They considered this worse than alcohol. The mother must be taught to use common sense with regard to her child and to develop firmness of will. It should be remembered that, as a rule, babies train their mothers, rather than mothers train the babies. Dr. Holt does not believe in the use of bacon, as it is too highly seasoned and therefore develops in the child a distaste for the less savory cereals. Cereals should be very well cooked. When a prepared food announces that twenty minutes of cooking are necessary, Dr. Holt recommends two hours. When the recipe says one hour, Dr. Holt insists on four. As a rule, in New York, cooks do not get up sufficiently early to cook cereals thoroughly well for the children's breakfast, therefore these should be cooked the night before.

Fruit and Orange-Juice.—Dr. Crandall said that fruit should be added to the childrens' diet early. Orange-juice, baked apples, and prunes are the simplest and best. As children like old stories and old toys and do not care for variety in their stories or toys, so they often do not crave much variety in their food. If their wishes be respected in this matter, the diet is sometimes inadequate.

Dr. Kerley said that he uses full milk for all babies under his care after twelve months. He does not like beef-juice as an ordinary addition to the diet. An ounce of beef-juice given daily may produce irritative conditions in the intestines and set up colitis and the like. The 10 P.M. meal should not be advised after the fifteenth month. After the fifteenth to the eighteenth month spinach and baked potatoes are added to the diet.

In closing the discussion, Dr. Coit said that potatoes as obtained in the market are often immature, hence their indigestibility. Baked potatoes are better than boiled potatoes because in boiling they are submitted to a heat of only 212° F., while the heat of the oven reaches 350° F., and this breaks up the starch globules better.

Dr. Southworth said that he recommends the use of the bottle in children during the second year only for the reason that in this way children can be easily made to take larger quantities of milk than they otherwise would. As a rule, the larger the amount of milk that enters into the dietary at this time, the better for the child.

NORTH BRANCH PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, Held March 20, 1902.

The President, A. M. Eaton, M.D., in the Chair.

Ovarian Disease as a Factor in Pseudocyesis.—Dr. J. Thompson Schell read a paper with this title. A brief résumé of the literature on this subject was given and in all but one instance the cause of this condition was assigned to the mental state of the patient, the only contrary opinion being expressed in an article by Dr. E. N. Chapman in the "American Medical Times" of 1864, in which the possibility of irritation of the uterus and amenorrhea being the cause is suggested. Four cases which have occurred in the author's experience were then reported, and in each of these instances there had been some history of ovarian disease. The ages of the patients varied from twenty-eight to thirty-three and all had previously borne children. All these cases during the early period of the supposed pregnancy had presented the typical symptoms thereof, such as nausea, cessation of menstruation and enlargement of the abdomen and breasts, and in every instance was the patient firmly convinced that she felt the movements of the child. In the first case the patient, after being in labor forty hours under the care of her attending physician, was removed to the hospital, and upon examination under ether was found not to be pregnant. A curettage was done resulting in the removal of some shreds of endometrium, and the patient was discharged from the hospital twelve days later, since which time she has complained of symptoms indicating pelvic involvement, but as she refuses to be examined this cannot be definitely stated. The second patient, after missing several periods, again began to menstruate and upon examination under ether a curettage was done, after which the patient made a good recovery, although she still suffers from irregular and painful menstruation, backache, leucorrhea, and pains and tenderness in the left ovarian region. The third case was a markedly neurotic patient, and, as in the preceding case, upon menstruation recommencing, she was examined under ether and curettage performed, after which she made a good recovery, although she has subsequently suffered somewhat from nervousness, nausea, and backache. The fourth case presented practically the same symptoms as did the others; as in the second and third case an examination under ether was made and a curettage done, a quantity of diseased endometrium being removed. This patient made an uninterrupted recovery. Attention was called to the fact that in none of these cases could the condition be based upon the theory of the menopause being a factor, as all were far below the age of this period. Neither did it seem that any of them were either very desirous or very averse to becoming pregnant. While the author does not attempt to overthrow the theory that pseudocyesis is the result of a mental condition, he suggests the possibility of ovarian disease being a factor in the production of the mental state.

The discussion was opened by Dr. John G. Clark, who divided cases of pseudocyesis into three classes, viz., (1) those that fear pregnancy; (2) those that expect to be pregnant, and (3) those that especially desire to be pregnant. In the first class the missing of one or two menstrual periods will often fix the delusion of pregnancy in the woman's mind, especially when the fear is superinduced by previous illicit intercourse. The second class usually occurs in the married woman who goes along in the ordinary course of events expecting to be pregnant and, of course, the missing of one or two periods firmly fixes this idea in her mind. The third class is generally observed about the age of the menopause and generally occurs in women who have previously had no children, the patient oftentimes being a typical society woman, who has in the early part of her life done everything to avoid conception and in some instances, perhaps, even terminated pregnancy artificially. The opinion was expressed that the symptoms in these cases are of a mental rather than of a physical nature, but it was also suggested that possibly this mental condition might be caused by disease of the genital organs and this possibility was strengthened by the fact that, in many cases in which insanity has occurred coëxistent with ovarian disease, the removal of the latter condition cured the former.

Dr. Charles P. Noble stated that out of about 150 cases of this condition which had come under his observation, the large majority had been observed in patients who were especially desirous of being pregnant. Contrary to the opinion expressed by Dr. Clark, he believes that most of these cases occurred in women below the age of the menopause. In regard to the fear of pregnancy being a cause, he stated that, aside from those who had illicit intercourse, he did not recall having ever seen a case. Although he has seen a few cases in which ovarian disease was associated with this condition, yet he inclines to the opinion that it is caused by a mental rather than a physical disturbance.

Dr. Mordecai Price stated that in his experience most of the cases of this disease had occurred in neurasthenic women, and in many instances the patient was quite stout. While he views the mental condition as the immediate cause, he also feels that this latter condition is often produced by some disease of the genital organs. Several cases have also come under his notice in which both the attending physician and the patient were convinced of the existence of pregnancy, while the real trouble was a large fibroid or ovarian tumor.

Dr. Wilmer Krusen viewed the condition as being largely of mental origin and in most instances occurring in patients who were very desirous of having offspring, the delusion being superinduced by the missing of one or two menstrual periods, possibly due to anemia or some functional derangement.

Dr. Andrew J. Downes stated that the majority of cases which had come under his observation had occurred in women who were very desirous of being pregnant or in women who feared they might be in this condition illegitimately.

The Treatment of Puerperal Eclampsia.—Dr. William E. Parke reported a case and dwelt in considerable detail upon the etiology and treatment of this condition. This patient had been twice pregnant, the first pregnancy being terminated about the eighth month on account of convulsions, of which four occurred before the delivery of child and none followed. The patient apparently made a good recovery and repeated examinations of the urine failed to reveal the presence of albumin. During the second pregnancy her health remained good until the seventh month, at which time there was edema of the ankles; albumin was present in the urine and the quantity passed in twenty-four hours was very much lower than normal. Five days after the onset of these symptoms she complained of a pain between the shoulder-blades, for which a hot bath, rest in bed and hot packs were recommended. A pill containing calomel and podophyllin was also ordered. The attending physician had scarcely left the house after prescribing the above treatment before the onset of a convulsion, and another physician was called in the emergency who administered morphine hypodermatically. Two hours after his first visit the attending physician returned and, finding that five or six convulsions had occurred in the meantime, set about inducing forced delivery which was accomplished under anesthesia. Prior to delivery venesection had been performed, and immediately afterward 10 minims of Norwood's tincture of veratrum viride was administered hypodermatically. The pulse-rate at this time being 130, the same remedy was administered in 5-minim doses at half-hour intervals until the pulse was reduced to 60, at which time the frequency of the dose was reduced to two, three and six hours, according to indications. In addition to the above treatment, three drops of croton oil on sugar were placed on the tongue and an ounce of Epsom salts was injected into the rectum, followed later by enemata containing 30 grains of chloral and 60 grains of bromide. The patient made a fairly rapid recovery. Great stress was laid upon the importance of closely watching the patient during the period of gestation in order (1) to prevent the formation of the toxic agents which are the cause of this condition, and (2) to eliminate them if they are already present. Dietary and hygienic measures were advised and the importance of keeping the skin, bowels and kidneys active was emphasized. Phosphate of sodium, calomel, a pill containing aloin, belladonna and strychnine, and, if necessary Rochelle or Epsom salts, were recommended to secure free action of the bowels. For increasing the activity of the skin, hot baths and hot packs were recommended, and for stimulation of the renal function increased consumption of water, Basham's mixture, and in more urgent cases one grain each of calomel, squill and digitalis, thrice daily, were suggested. When the pulse is of high tension, nitroglycerin is of service. Suitable exercise in pure air was thought to be of considerable value in favoring elimination through respiratory channels. If, notwithstanding these preventative and curative measures, the renal insufficiency continue and toxemia increase, forced delivery is advised. For the treatment of the convulsions, venesection (withdrawing 12 to 30 ounces of blood, according to indications), inhalations of chloroform, veratrum viride, chloral and bromide and injections of salt solution, either through the veins or by the bowel, were recommended. Morphine was not thought to be indicated in these conditions, owing to the fact that it does not favor elimination.

In opening the discussion, Dr. John G. Clark stated that several theories had been advanced as to the causation of puerperal eclampsia, among them being that of Shrady who states that it is due to "brain irritation," while perhaps the most recent and undoubtedly the most scientific theory is that it is due to the retention of some poisonous product within the body. Experiments upon rabbits have developed the fact that the introduction of any drug or the application of the electric current will produce convulsions much more quickly in the pregnant than in the non-pregnant animal. The toxemic process may be produced by defective working of the kidneys, liver, skin, etc., and while it was formerly supposed that there were no pathological lesions in eclampsia, recent experiments by a German pathologist revealed the fact that in seventy-three out of seventy-five cases of this condition distinct pathological changes had occurred in the vital organs. The poisonous substance may also be produced by the fetus itself. Attention was called to the importance of eradicating the poison and prompt delivery of the fetus was recommended.

Dr. Noble laid especial stress upon the necessity for keeping a close vigil over the patient during pregnancy, with frequent urinalyses in order to determine the condition of the kidneys and the general health of the patient. Great importance was attached to the presence of either albumin or casts in the urine, and if in addition to these two factors the urine be scanty and the patient edematous, and rest in bed, hot packs and free purgation will not relieve the condition, the induction of labor was deemed advisable; in all cases delivery should be secured in cases of convulsions. As a remedy for the convulsions, blood-letting followed by the injection of salt solution into the veins was recommended in the case of vigorous patients. Chloral was thought to be good, but should be used with caution, while morphine and pilocarpin were not approved, the former owing to its contra-eliminating powers and the latter because of its increasing to an abnormal extent the secretion of all the fluids of the body. In treating these convulsions the proper course was thought to be to relieve the convulsion and then set about the delivery of the child, rather than to direct the whole attention to either end.

Dr. Price recommended that the attention be first directed to the convulsions, stopping them if possible, before setting about the delivery of the child. For this purpose he considers venesection the most beneficial measure. Chloroform he considers of but little value, as its effect is not lasting; morphine and pilocarpin were not recommended and chloral was thought to require great caution. The importance of previous careful examination and frequent urinalyses, when opportunity permits, was fully recognized.

Dr. Krusen stated that in his opinion the urine should not be examined for albumin alone and recommended a careful urea estimation in all cases. Among the various methods of treatment mentioned were the different drugs which had been recommended by the previous speakers, hot packs, venesection and the substitution of salt solution, and the injection of the salt solution by means of the bowel. Prompt delivery was recommended in all cases.

Dr. Downes considered that the most necessary thing in the treatment of puerperal eclamsia was prompt delivery; the difference in the mortality among the cases which he has observed in private practice and in hospital work he attributes to this cause. He recommended the use of morphine or chloroform to stop the convulsions. Immediate delivery should follow. Rectal injections of salt solution and hot packs were also suggested.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held March 10, 1902.

The Vice-President, William McCollum, M.D., in the Chair.

Death of Dr. E. A. Tucker.—The Statistical Secretary having announced the death, on March 3, of Dr. Ervin A. Tucker, one of the charter members of the Association, the President, on motion, was authorized to appoint a committee to prepare a suitable minute on Dr. Tucker's death.

Indications for Operative Interference in Tuberculous Growths in the Larynx.—Dr. W. Freudenthal presented specimens of tuberculous masses removed from the larynx of a patient, twenty-six years of age, who had been in ill health for two years and who had at the present time cavities in the lungs; he made some remarks on the indications for operative interference in such cases. Of twenty-nine cases of curettage of the larynx for tuberculous infiltration previously reported by him, eighteen remained entirely unimproved, seven improved slowly, and four showed improvement almost immediately after the operation. There were two indications for this procedure, namely (1) dyspnea and (2) pain and dysphagia which cannot be otherwise relieved. In many cases the pain, which was apt to be very intense, could be efficiently relieved by simple intralaryngeal applications, and the one which he had found most satisfactory was an emulsion of menthol and orthoform. In some instances, however, it was impossible effectually to reach the parts affected, so that the alleviating medicament could not be absorbed *in loco,* and it was these cases in which curettage became necessary. The operation was a very simple one and almost as easy to perform as excision of the tonsils. In the present case two operations had been required. After he had removed some masses of the patient's larynx high fever set in and within a week infiltration came back. After the second operation, however, there had been no recurrence of the infiltration, and four weeks had now elapsed.

Induction of Premature Labor.—The paper of the evening was read by Dr. Henry C. Coe and was on this subject. He said he had chosen a familiar theme for the purpose of emphasizing the fact that in one's anxiety to improve upon existing methods one is apt to undervalue those which have stood the test of experience. He could not accept without protest the growing tendency to extend the indications for operative midwifery so that it may keep pace with the development of modern surgery. Whatever the explanation might be, it was clear that the field of obstetric surgery had been greatly extended during the past decade, as shown by the attention bestowed upon it by all the recent text-books, and the practitioner could not be indifferent to the fact that midwifery is no longer an art, but a science as well. The care of the pregnant female includes more than the perfunctory treatment of her minor ailments and an occasional superficial examination of her urine, while no attention is paid to the size and position of the fetus until labor actually commences. Only by careful observation during the later months of pregnancy can one recognize the danger-signals, anticipate serious complications and thus guide to a fortunate conclusion a case which might otherwise terminate disastrously.

In regard to the induction of premature labor, Dr. Coe said he desired to limit the discussion to those cases in which the natural labor is anticipated by a month or less, primarily in the interests of the mother, but also with the view of saving the fetus at a time when there can be no question as to its viability. Such interference with pregnancy was not to be lightly undertaken nor was it entirely free from risk; it *was* an operation and was to be conducted like one. It was not his plan to discuss all the obvious indications for the procedure laid down in text-books, but to confine himself to cases in which the mother is in good health up to the latter weeks of pregnancy and the fetus is alive. Habitual death of the fetus in the last month would naturally furnish a clear indication, provided, of course, that antisyphilitic treatment had been pushed without success. The two indications regarded as of most practical importance were renal insufficiency and a disproportion between the head and the parturient canal.

If any clinical fact had been impressed upon his mind it was that uremic symptoms, like the discharges in uterine cancer, usually represent not an initial process, but a culmination. Progressive diminution in the amount of urea (with or without the appearance of casts), in spite of dietary and medicinal treatment, is a clear indication of impending danger. If one waits for evidences of general toxemia, for headache, edema, dyspnea, and the familiar train of symptoms, one may wait too long. Within the past year Dr. Coe had had six cases in which labor was successfully induced on the indication of persistent and progressive diminution of urea during the last month. While an occasional trace of albumin and a few casts appeared in two or three, the amount of urine was seldom diminished below 600 or 800 c.c.; but the evident toxemic condition was the thing which, in his opinion, justified interference. It was not to be forgotten, either, that the child was in jeopardy also, from the vitiated state of the mother's blood. In private practice particularly patients were usually averse to interference when they felt perfectly well, but he had never found insuperable the objections raised by them or their families, especially when other counsel was obtained, as should always be the case.

The other common indication, disproportion between the head and pelvis, is not so clear, and its recognition requires frequent examinations after the seventh month, careful pelvic measurements, and attempts to estimate the relative size of the head and its adaptation to the parturient canal. This does not apply to obvious pelvic contraction, but to those minor degrees of anteroposterior flattening, marked false promontory, etc., which would possess no importance if the child were of medium size. If the fetus be plainly above the average size and if the mother be suffering from severe pressure symptoms, the propriety of interference a fortnight before term may be reasonably entertained; but in the case of primiparæ particularly the matter is often a very difficult one to decide. It presupposes a careful and conscientious study of the conditions and a clear understanding on the part of the mother that the interests of the child are to be considered as well as her own. The prognosis for the mother, so far as the risks of the operation and subsequent labor are concerned, may be an entirely favorable one; in reference to the child it should be more guarded, especially in uremic (or more properly toxemic) cases. It must be impressed on the family that the fetus is premature and that it will require special care for several weeks.

As regards technic the author said that while there was a good deal of room for improvement upon existing methods, he regretted that he had nothing new to offer. In the class of cases referred to, in which the aim was simply to anticipate, not to precipitate delivery, he assumed that the object was to imitate Nature as closely as possible by causing a softening and dilatation of the lower segment of the uterus, as well as intermittent contraction of the organ. The former was much more important than the latter, especially in view of the necessity for rapid emptying of the uterus which might arise. In premature labor violent contractions with a rigid, undilated cervix, and perhaps escape of the amniotic fluid, would naturally be a most undesirable result; and it was therefore a matter of surprise to find so high an authority as Hirst advocating the old practice of introducing a bougie into the uterus as the only method to be commended. Personally, he had abandoned this procedure, as it had proved very unsatisfactory in his hands. It was objectionable both on account of the danger of premature rupture of the membranes and because of the uncertainty of its action.

In his own practice he had found the best method to be the use of the gauze tamponade. Instead, however, of employing five or six feet of gauze, as was commonly taught, he rarely inserted less than five or six yards; his aim being thoroughly to distend the lower segment. The points which he emphasized in the operation were, rigid asepsis, a good light, sufficient assistance and control of the patient. An anesthetic might or might not be necessary; if so, nitrous oxide or chloroform, in skilled hands, was employed. A careful preliminary examination was advisable. That it was important to locate the placenta and also to push the gauze along the posterior uterine wall was illustrated by a case of accidental hemorrhage recently reported by him, in which a low-placed placenta on the anterior wall was partly detached after labor began, probably by pressure of the gauze tampon. In order to avoid rupturing the membranes the gauze must not be pushed in with too great force. Not much progress is to be expected for twenty-four hours, and the patient is allowed to be up and about. Quinine is pushed to the extent of ten grains every six hours with $^1/_{40}$ grain of strychnine. (It is Dr. Coe's routine practice to give strychnine during the last three months of pregnancy.) If pains are slight and irregular the gauze may be left thirty-six hours, but it is usually removed earlier, a good-sized Barnes bag being substituted for it, if necessary. Since he has been using quinine he has not once had occasion to introduce a bag, the labor progressing favorably without this assistance.

Should the condition of the mother or the interests of the fetus render it unwise to prolong the period of waiting, the opportunity for manual dilatation is now most favorable, owing to the softening of the tissues from the continuous pressure of the tampon. Under anesthesia the cervix may be dilated by the Edgar method and labor may then be allowed to proceed, or, if more rapid delivery be deemed advisable, version may be performed after thorough dilatation and paralyzation of the sphincter muscle. Dr. Coe said he had been tempted to try the mild faradic current to assist the action of the tamponade, but had hesitated to do so on account of the suggested objection (for which he could see no good reason) that the fetus might be imperiled. Having referred to some of the reasons why the artificial induction of labor was not resorted to more frequently by the profession, he said that the real reason why elective obstetrics is still in its infancy is that the physician does not yet fully appreciate the fact that his responsibility to the pregnant female begins long before parturition. This, indeed, is the essential difference between the rôle of the scientific physician and that of the midwife.

Danger to the Fetus from Asphyxia.—Dr. J. Clifton Edgar said the principal danger to the mother was from sepsis, and asepsis was therefore necessary in operating. One danger to the fetus not referred to in the paper was asphyxia. Any foreign substance introduced into the uterus must interfere to a greater or less extent with the placental circulation, and consequently, in artificially-induced labor, the child suffered from greater danger than in normal labor. He himself used the bougie, but in combination with other measures. It had been his experience, without exception, that in a few hours labor would supervene, and even in sluggish cases it would terminate without other interference. Accidents, indeed, had occasionally happened, as, for instance, the separation of the placenta with resulting hemorrhage; but they were so infrequent as hardly to be taken into consideration. His method consisted of three parts, (1) the introduction of one or two bougies (usually two); (2) packing the lower segment of the uterus with gauze; (3) saturating the gauze with sterile glycerin (but limiting the amount of glycerin used). He was in accord with Dr. Coe as to the good effects of both quinine and strychnine. The strychnine was useful as a preparation for labor, and he was accustomed to give injections of one-tenth of a grain in the second stage, as well as in the first.

Antiquated Methods.—Dr. E. H. Grandin designated as antiquated the use of both the bougie and glycerin. They were, he said, altogether too slow, as well as very uncertain in producing the desired result. Other objections to the bougie were that it was with difficulty rendered aseptic and that it was liable to cause separation of the placenta or rupture of the membranes, while glycerin was objectionable on account of its liability to give rise to nephritis. Both galvanism and faradism were absolutely useless.

The Best Method.—The best method was the insertion of gauze for the purpose of softening the lower uterine segment and thus bringing on labor in a natural manner. He always made use of this under anesthesia, always by sight and not by touch, and always with strict regard to asepsis. The gauze packing was followed by manual dilatation if the case were urgent; otherwise, contractions having been evoked, the progress of the case was left to Nature.

Toxemia of Pregnancy.—He was free to confess that at the present time he was in a very undecided position as to the advisability of always inducing premature labor in cases in which there is a progressive diminuton of urea. Formerly he had had no doubts in regard to the matter, but of late he had had two cases in which this fall of urea occurred, notwithstanding a strict milk diet and other appropriate treatment; yet both patients had been delivered at term without eclampsia or other complication. Quinine was of no value if uterine contractions were not present, but was of service when they were. Strychnine was useful in the last months of pregnancy as a tonic.

Bougie Successfully Used.—Dr. Charles Jewett said he generally used two bougies, No. 12, English scale, and provided with the stillette. No anesthetic was given. A Sims speculum was introduced before commencing the procedure, and force was carefully avoided in pushing up the bougies. Afterward the stillette was withdrawn. He never practically had a rupture of the membranes. Labor might certainly be expected to come on in twenty-four hours, and in most of his cases it was actually completed within this time. This method had proved very satisfactory in his hands, while tamponing the cervix had not done so. The glycerin tampon, as employed in combination with bougies by Dr. Edgar, he thought might be an advantage. Manual dilatation was undoubtedly called for in cases of great emergency; but when a choice of methods was permissible he thought it ought not to be used.

Manual Dilatation on Account of Special Conditions.—Dr. J. M. Mabbott said that in a recent case he had had to resort to manual dilatation on account of the presence of marked endocervicitis with a profuse leucorrhea, so that the urine was loaded with pus. He practised rapid manual dilatation under an anesthetic, as under the circumstances he did not feel justified in employing other methods. The dilatation was completed in thirty-nine minutes. He had expected to use forceps, but as there was a prolapse of the cord (which ceased beating before the rupture of the membranes) he did version, and the delivery was finished in an hour.

Advantages of De Ribes' Dilator.—Dr. J. I. Edgerton said that the Barnes bag could not be depended on, but with De Ribes' bag dilatation the size of the dilator could be obtained. He had used this appliance in fourteen cases and in all of them labor was brought on within six hours. He decidedly preferred it to the catheter, which very often ruptured the membranes. Besides, the latter could not be depended on, as labor might not be started up in forty-eight hours. The De Ribes bag could be boiled and thus rendered aseptic.

HARVARD MEDICAL SOCIETY OF NEW YORK CITY.

Stated Meeting, Held March 22, 1902.

The President, William B. Coley, M.D., in the Chair.

The paper of the evening was by Dr. John M. T. Finney of Baltimore, Associate Professor of Surgery at Johns Hopkins University. Its subject was "A New Method of Pyloroplasty with Report of Cases."

Pyloric Operations.—As a rule in recent years the operations upon the pylorus for cases of benign stricture are associated with the names of Heinecke and Mikulicz whose admirable technic and method of operating was a distinct advance over all previous work done in this department of surgery. When the first suggestion as to the necessity and advisability of operations upon benign stricture of the pylorus were made, digital or instrumental stretching of the contracted pyloric orifice was suggested. This proved, however, to be attended by too much risk and other operations had to be devised. Pylorojejunostomy was tried, but did not find much favor. Dr. Finney performed the operation upon one patient, an elderly woman, and, while her symptoms were greatly improved, the condition was not permanently relieved and many symptoms of discomfort and of inhibition of stomach function remained.

Gastroduodenostomy.—Nicoladoni in 1881 suggested the performance of gastroduodenostomy for these cases. Unfortunately, however, the emptying of the biliary duct into the duodenum above the connection with the stomach leads to the back flow of biliary secretion into the stomach. This sadly interferes with stomachic digestion and proves a constant source of annoyance to the patient because of the discomfort associated with the almost constant presence of bile in the stomach. Not in every case but in most cases, the circulus vitiosus of biliary reflux was formed. Hence the apparent necessity forced upon surgeons of providing some other means of correcting the pyloric stricture. Richardson suggested the use of a diamond-shaped excision with removal of portions of the duodenum and the suturing of the edges of the defect in such a way as to increase the caliber of the pyloric orifice. Jaboulay suggested submucous excision in order to avoid the dangers of sepsis because of the possibility of the stomach contents soiling the peritoneum.

Dr. Finney's Operation.—Other methods having proved unsatisfactory for many reasons, Dr. Finney was tempted to devise a new operation. The first and most important step in this operation is the freeing of the pylorus from all adhesions. Not infrequently in these cases there are extensive inflammatory processes extending around the pylorus that fasten it down rather firmly. Sometimes, as the result of these, the cases look almost hopeless. With patience, however, the pylorus can be freed and this must be accomplished if the operation is to be a success. After the adhesions are broken up, Dr. Finney inserts three sutures to be used as retractors; one is placed in the upper part of the pylorus, one in the lower part of the pylorus, and another in the lower edge of the stomach at the point where the new pylorus is to be made. Two sets of sutures are then inserted at the point where the new pylorus is to be situated. A considerable portion of the pylorus in its lower part can then be excised and turned upon the stomach-wall and fastened there by means of sutures in such a way as to leave a large opening from the stomach into the intestine. Before the cut edges are brought together all the redundant portions of the mucous membrane should be removed, in order to avoid the reoccurrence of a valve-like ridge that might interfere with the passage of food from the stomach.

Advantages of this Operation.—In pyloroplasty one of the dangers is that the pyloric opening may be so large that, when contraction takes place after the operation, the new orifice may prove more patulous than the one for which operation was done. Another difficulty is that there is always dilatation of the stomach when pyloric stricture has existed for a considerable time. The new pyloric orifice must be so situated as to drain the stomach rather readily. This facility of drainage is one of the features of gastro-duodenostomy that often gives patients such marked relief after that operation. After Dr. Finney's pyloroplasty there is no possibility of regurgitation of bile into the stomach unless in the manner in which it occurs in the normal individual. The evacuation of the stomach follows its usual physiological course and Dr. Finney's experience would seem to show that after a time in these cases the pyloric muscle recovers its tone and acts practically as the normal sphincter did.

Preparation of Patients.—The greatest care must be exercised in securing as far as possible perfect asepsis of the site of the operation. As a rule, patients who come to be operated upon for benign stricture of the pylorus are in poor general health. They have suffered greatly from inanition and so can not be expected to undergo a long preparatory course of treatment in the hospital. At Johns Hopkins Hospital the patients' mouths are cleaned very carefully a number of times a day for several days. At the same time they are given only sterile liquid food and water and no food at all for some twelve hours after the operation. Despite the apparently insuperable difficulties involved in the attempt to secure asepsis in one of Dr. Finney's cases, the stomach proved to be sterile before operation.

Post-Operative Course.—For thirty-six hours after the operation nothing is given by the mouth. Then a few teaspoonfuls of water are allowed; if this be well borne further small drafts of water are allowed and on the second day some albumen water and then some milk. The patient is not required to remain always on the back, but is encouraged to turn over whenever the sense of fatigue suggests and even to sit up in bed if they find it not an effort to do so.

Illustrative Cases.—In Dr. Finney's first case the patient had suffered from frequent vomiting and from abdominal distention and distress. All ordinary treatment for dyspepsia proved absolutely unavailing and the patient lost from fifteen to twenty pounds in weight. The heart and lungs were normal, but the outlines of the stomach showed considerable distension of that organ and succussion sounds were pronounced. An exploratory incision was made and some induration of the pylorus was found. The pyloric end of the stomach was bound down by adhesions and these were relieved as far as possible. The stricture seemed to be due to the contractile scar of an old ulcer. many of the symptoms, however, seemed to be attributable to the adhesions and it was hoped that the relief of these would give the patient comfort. Little benefit resulted, however, from this breaking up of adhesions. Some months later the patient was operated on once more and the pylorus was found much contracted and more firmly bound down by adhesions then before. Pyloroplasty according to Dr. Finney's method was done and since then the patient has had no return of the old symptoms, has gained over twenty pounds in weight, does not suffer from abdominal distress or distension of the stomach and there seems every reason to think that the condition has been permanently relieved.

In a second patient there had been vomiting off and on for nearly two years. This had been followed by pronounced emaciation and severe anemia. There was considerable tenderness over the pylorus. At the operation a rather close stricture of the pylorus was found. After the performance of the operation the course of the case was without incident. The patient has now regained her old weight and eats anything and everything that she wishes and suffers from no discomfort. In a third case the patient had been compelled to live on soups and crackers for over two years. Dr. Halsted did an exploratory laparotomy and, as the stricture of the pylorus seemed benign, he made an opening into the stomach and performed a Loretta operation, dilating the pylorus with his finger. When Dr. Finney came to operate many adhesions were found and the operation was not only difficult, but serious, because of the extensive hemorrhage. Since the pyloroplasty done by Dr. Finney the patient has gained forty pounds in weight.

In a fourth case, operated on a few days ago, the patient, a bar keeper, forty-eight years of age, had a history of having been a hard drinker. Eighteen years age he had a hemorrhage from his stomach. Recently he had had severe pains, and had found it difficult to retain anything in his stomach. Sometimes the vomited material contained substances that were swallowed several days before. The man was in very poor general condition, and had beginning tuberculosis at the apices of both lungs. He would not have submitted to operation but for the fact that he had been using an old stomach-tube for the purpose of washing out his stomach and a portion of it had broken off and remained in his stomach. After this accident he felt better. The pylorus was found thickened and greatly indurated. It was infiltrated with dense scar tissue and all of this was excised. After the operation four fingers could be passed through the pylorus. So far this patient is doing very well and promises to emulate the others in rapid improvement.

Reinstatement of Pyloroplasty.—Dr. Charles L. Gibson, in discussing Dr. Finney's paper, said that personally he had rejected the idea of pyloroplasty for such cases and that, knowing the complications apt to follow gastroduodenostomy, he would have been at a loss how to operate. To his mind, however, Dr. Finney's operation reinstates pyloroplasty as a beneficial procedure for these extremely bothersome cases.

Dr. Walker said that undoubtedly the method outlined by Dr. Finney was simpler and more efficacious than any of the methods previously suggested. It was especially hopeful because it seemed to furnish good ground for the idea that the patulousness of the pylorus would be maintained permanently after the performance of this operation.

Advantage of Large Opening.—Dr. Dowd said that the best feature of Dr. Finney's operation to his mind was the large opening that it provided in the new pyloric orifice. Dr. Finney's whole technic was excellent and most thoroughly worked out. Dr. Dowd saw a case about eighteen months ago in which the usual form of pyloroplasty was done, but after a year the pylorus was so firmly bound down by adhesions, the adhesions extending well around the stomach, that gastric peristalsis was interfered with and discomfort experienced because of the consequent dyspepsia. In order to relieve the case gastroenterostomy was done on the posterior wall of the stomach. Undoubtedly the use of Finney's operation in this case would have been a more suitable procedure.

Dr. Lilienthal said that Dr. Finney's operation seemed to do away with most of the dangers of pyloroplasty. In his own experience the speaker has never seen a case in which the tissues seemed pliable enough for the Heincke method of performing pyloroplasty. For the thickened indurated tissues Dr. Finney's operation seems especially suitable. Dr. Lilienthal is particularly surprised that a cavity like the stomach can be practically disinfected or even rendered absolutely sterile in so simple a way as that suggested by Dr. Finney. Especially is this surprising when it is considered that in these cases of stricture of the pylorus the stomach is usually very much distended and the cavity is apt to be full of all sorts of fermenting material and to be an especially favorable culture chamber for micro-organisms of many kinds. The question of rendering the digestive tract aseptic by means of mouth-washes and the use of sterile foods seems one of the most interesting raised by the paper of the evening.

Sterilization of Stomach.—Dr. Coley said that the results obtained by certain foreign investigators show that it is going to be possible by careful attention to the cleanliness of the mouth and the use of sterilized food to sterilize completely the interior of the stomach.

Dr. Finney said that of course no conclusions can be drawn from the small number of cases treated in this way at Johns Hopkins, but the bacteriological examinations have been most carefully made and there seems to be no doubt that a practically sterile field for operation can be obtained by due care of the mouth and by use of perfectly sterile liquid food. It has long been known that the mouth is one of the main sources of the micro-organisms that find their way into the digestive tract and especially of the micro-organisms that disturb the stomach.

Removal of Adhesions.—Dr. Finney said that the most important part of this operation that he suggests for stricture of the pylorus consists in freeing this portion of the gastro-intestinal tract from adhesions that may bind it down. As a rule, these cases have run a rather long course and the prolonged inflammatory reaction usually causes the development of extensive and extremely firm adhesions. In three of Dr. Finney's four cases the first examination of the site of operation after the abdomen was opened seemed to give a very hopeless outlook for the success of any operative procedure. It seemed almost impossible to dig out the firmly bound down viscera that were to be operated upon. These adhesions must be freed, however, and patient efforts must be made until the pylorus can be lifted up. For the technic of the operation the three suture retractors suggested are extremely important.

In doing the stitching Dr. Finney has used a needle-holder containing a bobbin of suture material in the handle. This is an extremely simple invention devised by a member of the house staff at Johns Hopkins and it facilitates the use of suture material so much that the only surprise is that such a device should not have been thought of before. The instrument enables the surgeon to place continuous sutures without any of the difficulties involved in the tangling of long sutures that is so common an annoyance.

Case History.—Dr. Finney exhibited a typical example of case history as taken in the wards at Johns Hopkins. This was the history of one of the cases described during the evening and was chosen absolutely without any idea of presenting a specially good example of history-taking. It was the admiration of all those present at the meeting and Dr. Finney was asked how they were able to secure such personal interest in the work on the part of the resident physicians. The resident surgeon at the hospital holds his position by permanent appointment. He is usually selected from the house staff and has proved his ability during residence in the house. Every week there is a meeting of the staff at which the visiting surgeons are present and the histories of the various patients are submitted for criticism and approval. So far this criticism has proved extremely helpful. It is done with sincerity and with openness and yet without giving offence. Every possible item of information with regard to the patient is carefully gleaned. Every secretion is examined and every opportunity provided for obtaining complete details as to the patient's physical condition.

Primary Carcinoma of Umbilicus.—Dr. Reynold W. Wilcox presented a specimen of a primary carcinoma of the umbilicus that had recently been removed from a patient under his care. The patient was a man of seventy-two who came about a month ago to be treated for acute bronchitis. After he had been seen several times and his bronchitis was improving the patient complained incidentally of the fact that there was something in his abdomen which made it difficult for him to stoop to button his shoes. An examination disclosed the presence of a hard tumor situated in the umbilical region. The tumor was of limited area and was evidently a scirrhous cancer of the umbilicus. As soon as the bronchitis was better Dr. Wilcox suggested that an operation be performed. As the tumor was of slow growth it did not seem inadvisable to wait for the short time until all coughing should be over, so as to avoid any possible strain upon the edges of the abdominal incision after the removal of the tumor. The umbilicus would seem to be in theory a typical place for the development of primary carcinomata. A series of epithelial elements come to the surface at this point and a stage of early involution causes the obliteration of active cells early in life. It is at such points that cancer is looked for. As a rule, carcinomata in this region develop from the remains of the urachus. Primary carcinomata are, however, very rare here and this is one of the few that have been found in New York.

Dr. Gibson asked if there were any history of the patient's having had a patulous urachus in early life. Not infrequently the irritation of something like this seems to be the cause of the development of the neoplastic process later on. He asked also if there had been any history of irritation in this region. Dr. Wilcox said in reply that there had been no history of either patulous urachus or of chronic irritation in this region from any other cause. The patient's attention had been indirectly called to the existence of the tumor by the difficulty and tenderness experienced when he stooped.

Intestinal Obstruction and Navel Carcinoma.—Dr. Howard Lilienthal said that a patient was admitted to his ward last year suffering from all the symptoms of acute intestinal obstruction. Examination showed the presence of a lump at the umbilicus, but this was not thought to be connected with the intra-abdominal symptoms. After the opening of the abdomen it was found that a loop of intestine deeply infiltrated with cancer cells was adherent to the tumor at the umbilicus which proved to be a carcinoma. The portion of intestine was removed and also the infiltrated area around the umbilicus itself. Microscopic examination seemed to show beyond all doubt that the tumor was a primary carcinoma of the umbilicus which had spread by continuity to the adherent loop of intestine. The patient died some weeks later as the result of carcinomatous metastases. While cases of primary carcinoma of the umbilicus are rare, it is evident that they must be looked for occasionally and they should of course be treated by radical operation as early as possible. So far in most of the reported cases operation, for one reason or another, has been delayed too long and the result has been a large mortality in such cases.

BOOK REVIEWS.

Practical Surgery for the General Practitioner. By Nicholas Senn, M.D., Ph.D., LL.D., Professor of Surgery, Rush Medical College; Attending Surgeon to the Presbyterian Hospital; Surgeon in Chief to St. Joseph's Hospital; etc. W. B. Saunders & Co., Philadelphia and London.

In the preface to this book the author announces that it is written mainly for the guidance of the general practitioner and is intended to simplify and lighten his work in meeting the many emergencies that make part of his daily routine. While not urging the average physician to undertake difficult or hazardous operations with merely a theoretical equipment, he recognizes that conditons often require bold action on the part of a comparatively untrained operator and offers many practical hints for use in such emergencies. But the book covers a much wider range than such a plan would indicate and under many headings, such as that on intestinal obstruction, for example, comprises an almost monographic fund of up-to-date information. The subject matter is everywhere so instructive and is presented in such an attractive manner that a few peculiarities in arrangement and some unevenness in the practicality of the various sections are readily condoned. For instance, the interpolation of a chapter of seven pages on "Rupture of the Urethra" between the massive sections on "Gunshot Wounds" and "Fractures" and of eight pages on "Aseptic Catheterization" sandwiched in between the drainage of suppurating joints and intubation seems hardly logical, while the many detailed descriptions of experimental operations on animals, though of undoubted interest to specialists, will probably be irreverently skipped by all but the most conscientious of general practitioners.

After a short introductory homily in which the author invades the realm of the moralist and expatiates on the beauties of punctuality, military spirit, courage and good personal habits in the military surgeon, he treads on more technical ground and broaches his subject in a most admirable essay on shock, with its etiology, symptoms and treatment. Salt solution by enema and intravenous infusion, and hypodermatic injections of camphorated oil are advocated as more reliable cardiac stimulants than strychnine, the value of which is doubtful in this condition. The discussion of chloroform anesthesia is very complete, though the subject of etherization is dismissed in two pages. The author disapproves of the various systems of impermeable cones and to-and-fro breathing that are coming into use in the administration of the latter agent and we find no mention of nitrous oxide as a means of rendering the earlier stages of the narcosis less disagreeable to the patient. Under hematosis the author describes a new method of bloodless amputation at the hip which employs two elastic constrictors and dispenses with the use of transfixion pins. The chapters on the treatment of wounds, wound infection and antiseptics are excellent and in the latter a method of sterilizing catgut by boiling and by the use of formalin without impairing its strength is given. Rubber gloves in operating are described as furnishing a soothing poultice for the conscience of the surgeon who fails properly to prepare his hands and turpentine is considered superior to alcohol in sterilizing the skin. The general treatment of the subject of fractures is unusually comprehensive, especially in the sections devoted to such complications as delayed union and fat embolism, which is said to be "one of the least dangerous, but most frequent complications of fractures." The only special fractures described, however, are fracture of the neck of the femur, Colles' fracture and fractures of the skull.

The surgeon will probably turn with greatest interest to the portion of the book (over 350 pages) devoted to abdominal and intestinal surgery, which the author's high reputation in this field makes of exceptional interest and value. The use of rectal insufflations of hydrogen gas as a diagnostic resource in perforations, for the detection of the site of obstructions, etc., and as a therapeutic measure in the reduction of intussusception is fully described and their value shown by citations of operative cases. The author's decalcified bone approximation plates have been found more satisfactory in routine work than the Murphy button and their preparation and the technic of employment are clearly indicated. Laplace's forceps for accomplishing the same end are pictured and commended, but the rather complicated method of their use is not given. Other subjects that are emphasized are the value of gastric lavage in intestinal obstruction and allied states, the advantage of transverse rather than longitudinal incision in enterotomy and the very important matter of the prophylaxis of intestinal obstruction after laparotomies. In the technic of herniotomy a curved incision is described which possesses several advantages over the conventional linear one.

This but very imperfectly sketches some of the more prominent features of this most fascinating book which cannot but interest anyone even remotely connected with surgical work. Every page bears the imprint of a strong personality, ready to launch out in hitherto unthought of directions and teeming with originality, so that even when taking issue with the author the reader is stimulated to new ideas and finds profitable food for thought.

Etudes Anatomiques sur les Grossesses Tubaires (Anatomical Studies on Tubal Pregnancy). By A. Couvelaire, Ancien Interne des Hôpitaux, Chef de Clinique Obstétricale à la Faculté de Médecine de Paris. Paris, G. Steinheil, 1901.

This is an extensive study of sections of fourteen tubes containing living ova. The varieties of tubal pregnancy are considered to be interstitial, isthmic, and ampullary, the last the most common. The first chapter is devoted to this classification based on topography; the second to the modifications of the gravid tube; the third to the topographical anatomy of the ovum in the tubal sac; the fourth to a histological study of the grafting of the ovum on the wall of the tube; the fifth to the free pole of the ovum, and the relations of the ovum to the mucous membrane of the tube; the sixth considers some anatomical points and the mechanism of rupture early in the course of tubal pregnancies. There are 21 plates, including 49 figures, illustrating both the gross and the histological anatomy. This monograph is certainly a valuable addition to the extensive literature on the subject.

The New York University Bi-Weekly Bulletin. General University Catalogue. Published Twice a Month, except from August to December, by the New York University, Washington Square, New York.

Aside from the general interest which is naturally awakened by the growth in our midst of a great center of learning, there is a very special type of information in these catalogues which is hardly to be found elsewhere. The interest awakened hinges very natually on the fact that there is a departure from the ordinary. On page 299 the catalogue treats of the work done and of the courses presented by the Woman's Legal Education Society, which for the last ten years has supported the chair for the Woman's Law Class of the University. A very able and prominent Board of Directors govern the proceedings of this department, Mrs. John P. Munn, Mrs. Clarence D. Ashley and Miss Helen M. Gould being prominent among them. Inasmuch as physicians come into such close contact with the physical welfare of women, and since there cannot be a practitioner of any worth who has not seen case after case of women physically wrecked because of lost fortunes and consequent lost social status—all lost because of woman's ignorance of legal matters—physicians as a class will realize perhaps more keenly than others the great work which is being done in this line by the New York University.

The other strictly individual announcement in this catalogue is that of the School of Commerce, Accounts and Finance. It was established in October, 1900, for the purpose of training men for the higher duties of commercial life. After two years of satisfactory work it gives the degree of Bachelor of Commercial Science. There is little doubt that a great many conservative business-men will cry down any such preparation, but it was called into being by a progressive element. The days when business men will begin their career as office boy, to rise step by step, are just as surely passed as those when medical education consisted chiefly in the student gleaning a very little information and doing a great deal of very useless work in the office of an old practitioner. Just as surely as we have happily outgrown the "preceptor" stage and have in its poor place a laboratory and clinical training and just in the degree that this is better than the old method, so is the new School of Finance better and more modern than the archaic business education which began as office boy. The University is particularly to be congratulated on these two very progressive departments.

Annual Report New York State Reformatory at Elmira. 1901. Twenty-Sixth Year-Book. Illustrated. Summary Press. 1901.

The topic of major interest to physicians in this report is the Biographical Compendium prepared from information concerning 10,538 inmates committed since 1876. The following points relate to the parents of inmates. Ten and one-half per cent. had epilepsy; in about 40 per cent. drunkenness was clearly traced. The figures touching on ancestral education are significant. Thirteen per cent. were absolutely bereft; 29 per cent. could read and write; 52 per cent. had an ordinary common school education. Only 4.80 per cent. of these ten thousand young men had parents whose education had progressed beyond the high school. It is a natural sequel of this, and a factor which should make those who withhold their cordial support from the education of the masses, that but 2 per cent. of the inmates had for parents professional men. Furthermore, it is noteworthy as well as somewhat amusing to note that of this 2 per cent, theological parents furnished the minimum; the minister's son, it appears, is a much abused scapegoat.

Regarding the inmates themselves, half of them had a home environment which was positively bad. Contrary to the usual supposition, one-half of the young offenders lived at home during the perpetration of the crime for which they were convicted. So far as their education goes, there is a very pointed relation between this factor in the individual and his parent. Practically the same small percentage (4 per cent.) of the inmates had a high school or higher education.

Altogether, this little volume contains much that is of value and should be read by those high State officials who contemplate making dire changes in our public institutions.

BOOKS RECEIVED.

The Medical News *acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the* Medical News *will shortly appear.*

Psychic Research and Gospel Miracles. By Rev. Edw. M. Duff and T. G. Allen, M.D. 8vo, 396 pages. Thomas Whittaker, New York.

Transactions of the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics. First Annual Meeting, 1901. Edited by William Pryor Letchworth, LL.D.

Sixteenth Annual Report of the State Board of Health of the Commonwealth of Pennsylvania for the year 1900.

The Peritoneum. By Byron Robinson, B.S., M.D. Second Edition. 8vo, 404 pages. Illustrated. Chicago Medical Book Co.

Morphinism and Narcomanias from other Drugs. By Dr. T. D. Crothers. 12mo, 347 pages. W. B. Saunders & Company, Philadelphia and London.

Progressive Medicine. Edited by Dr. H. A. Hare. Assisted by Dr. H. M. Landis. March, 1902. 8vo, 458 pages. Lea Brothers & Co., New York and Philadelphia.

The International Medical Annual. 1902. E. B. Treat and Co., New York.

THE MEDICAL NEWS.
A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. 80. NEW YORK, SATURDAY, MAY 3, 1902. NO. 18.

ORIGINAL ARTICLES.

ANOTHER CHAPTER ON PHTHISIOPHOBIA, AND RESOLUTIONS ADOPTED BY THE NEW YORK ACADEMY OF MEDICINE.[1]

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SINCE my recent address on "Official and Private Phthisiophobia"[2] I have been the recipient of numerous letters, some encouraging and approving my attitude, some abusive, some asking for information, and so on. I will make no attempt to answer all of them; only to the more pertinent inquiries, and perhaps also to the accusations, shall I reply.

First the question, "What is it all about?" These resolutions before you are certainly not offered solely on account of the few dozen tuberculous immigrants who are so far gone that their disease can be rapidly diagnosed by simply marching them in file before the Quarantine officer; it is above all the principle which is involved. Is it right, is it scientific, is it just, and it is humane to declare pulmonary tuberculosis a dangerous contagious disease, and to debar on that account not only the non-pauper tuberculous immigrants, but also all alien visitors to these shores who may suffer from pulmonary tuberculosis? That there may be no mistake about this, permit me to make the following statement: The Immigration Commissioner, Hart N. North, of San Francisco, who had some doubt about this ruling, communicated recently with the authorities in Washington and received the reply that in regard to barring consumptives from American ports there was to be no class distinction, but that all must be treated alike.

It has been doubted by some that any ruling at all had taken place. With praiseworthy conservatism this Academy postponed action on these resolutions until having heard directly from the Treasury Department in Washington. The reply to the inquiry was that the ruling in question consisted of the promulgation of a written opinion on the matter proposed by the supervising Surgeon-General of the Marine-Hospital Service to the effect that tuberculosis of the lungs is a dangerous contagious disease.

What thus far have been the consequences of this ruling? A very small number of immigrants have been debarred, but on the strength of this government declaration not only tuberculous patients in the first stage of the disease, who were trained to take care of their sputum, have lost employment, but individuals who were simply suffering from an innocent cough, and others who had only the misfortune of being obliged to live with a consumptive, were discharged because their employers or fellow-workers feared contagion. Municipalities, situated in particularly healthy regions, which formerly allowed their unsupervised boarding-houses to be crowded with consumptives—which was unsafe and unwise—have gone now to the other extreme, prohibiting the establishment or the existence of well-conducted sanatoria in their neighborhood. Yet it is known to us all that there is not the slightest danger from well-conducted sanatoria; they are, on the contrary, veritable schools of hygiene, exerting a most beneficial influence by educating the people at large in preventive measures.

One of the most remarkable incidents in connection with this insane fear was recently related in *American Medicine,* under the false heading "False Preaching and an Over-zealous Convert." It reads as follows: "Those who would spread among the community by deportation of tuberculous immigrants, etc., a belief that tuberculosis is a dangerous contagious disease, should consider the results that may follow the acceptance of such teaching upon the part of ignorant and panicky people. An excellent illustration is an incident that occurred recently at Frederick, Maryland. A church trustee met a funeral procession at the door of the church and refused to allow services to be held over the body of a woman who had died of tuberculosis. This obstreperous person carried his point, causing hardship and arousing great bitterness of feeling. This is a good method of making people hate even legitimate methods of encouraging preventive medicine."

I have spoken of what the consequences of this ruling have already been, and mentioned some of the manifestations of official and private phthisiophobia. Let me now speak to you of the more serious results that will come if this insane fear continues. Individuals who are suffering with the early symptoms of tuberculosis, or others who feel themselves in danger of becoming consumptive, will hesitate to seek medical advice for fear of being declared to suffer from a dangerous contagious disease and becoming subject to social ostracism. What a fearful loss of life a retarded diagnosis in pulmonary tuberculosis means I need hardly dwell upon in an audience of physicians. All our hopes in phthisiotherapeutics are centered on the early recognition of pulmonary consumption. Our American sanatoria report as many as 75 and more per cent. of recoveries of incipient cases. How very much lower the percentage of cure is when the patients have passed the incipient stage we all know only too well.

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[1] Remarks made at the meeting of the New York Academy of Medicine, Feb. 6, 1902, in support of the resolutions.

[2] N. Y. Med. Record, January 11, 1902.

In an open letter to the New York *Medical Record* of February 1st Dr. A. L. Benedict of Buffalo says that I was pleading against the United States Marine Hospital Service for the admission of poor consumptive foreigners. If this was meant to imply that I favor pauper immigration, I beg to protest. I have said distinctly and repeatedly in previous publications on this subject, and particularly in the one referred to by Dr. Benedict, that pauper immigrants should not be admitted, whether tuberculous or not. The same correspondent, who headed his letter "The Good in Phthisiophobia," says: "Destroy phthisiophobia and you might just as well abandon the fight." There can be no good in any kind of phobia, or madness, and phthisiophobia is madness. There is a vast difference between phthisiophobia and a healthy fear of the transmission of the disease. I am most anxious to destroy the former, most willing to encourage the latter. Thus far the experience in the antituberculosis crusade, not only in this city but all over the world, has taught us that a great deal more can be accomplished by instructing the patient and his family, and that it is wiser to educate people than to frighten them into obedience of sanitary laws.

Another question has been asked which seems to me worthy of reply: "What is the difference between a dangerous contagious and a communicable disease, anyhow?" The word contagion, coming from the Latin *contagio,* conveys the idea that the disease is transmitted by the mere touch of the afflicted individual. This is not possible in tuberculosis, although the consumptive may be even what is commonly called unclean and careless. Only prolonged exposure to the inhalation of the germs, particularly within walls, becomes dangerous. Prolonged contact with the consumptive who takes care of his expectoration and other secretions which may contain the bacilli is absolutely without danger. In sanatoria for consumptives where the precautions concerning the sputum are most strictly adhered to, one is perhaps safer from contracting tuberculosis than anywhere else. The great danger from tuberculosis lies in the indiscriminate deposit of tuberculous sputum, which, when dry and pulverized, may be inhaled by susceptible individuals and then cause the disease to develop.

The communication of the germ of the disease is, however, not obscure to us in its process, and is far more easily guarded against than in any of the dangerous contagious diseases, such as smallpox, diphtheria, scarlet fever, etc. The contact, short or long, of a smallpox patient is dangerous under almost all circumstances, and what has been previously said of the sanatorium as being the safest place from contracting tuberculosis, can not well be said of even the best kept smallpox hospital in regard to variola. We know the latter disease to be dangerously contagious, but we do not as yet know the germ of contagion nor its process of dissemination. We know it exists and can only guard ourselves by preventive vaccination and isolation at the moment of the breaking out of the disease. The difference in relative danger of transmission of the disease and in the control of the contagium between smallpox and tuberculosis illustrates perhaps better than anything else the meaning of "communicable" and "dangerous contagious."

It has been said that these resolutions were a one-man opinion. There is nothing easier for me than to refute this assertion. Long before I appeared before you with these resolutions, no less an authority than Prof. Hermann M. Biggs, of this city, publicly declared this action of the Treasury Department unnecessary, inhumane, and unscientific. Before submitting these resolutions I showed them to my honored teacher, Prof. Janeway, and I not only had his approval, but he also expressed his fear that if the Treasury Department continued to insist upon carrying out these laws there would be retaliation on the part of European governments. Prof. Janeway distinctly declares that tuberculosis is only a communicable and not a dangerous contagious disease. Dr. Andrew H. Smith, it may be remembered, at the last Academy meeting, graphically described the unnecessary cruelty inaugurated by the Treasury Department. Dr. Shrady of the New York *Medical Record* says in a recent editorial: "While the senseless scare lasts the consumptive has a poor chance for decent harbor or proper treatment. The sick immigrant is not only prevented from landing on our shore, but the native is forbidden to take his chance in health resorts. He must in many quarters not only be treated as an outcast, but allowed to die like one." Dr. Foster of the New York *Medical Journal* considers the United States Bureau of Immigration ill advised, and Dr. Geo. H. Simmons of the *Journal of the American Medical Association* wrote to me: "The resolutions presented to the Academy of Medicine are to the point and express the opinion, I believe, of about 90 per cent. of the best men in the profession who have given thought to the subject." Dr. Geo. B. Fowler, ex-President of the New York County Medical Society, writes me that his views on the subject coincide with mine exactly. The Secretary of the Wisconsin State Board of Health, Prof. U. O. B. Wingate, says: "The action of the head of the Marine-Hospital Service in this matter is simply inhumane." Dr. August J. Lartigau, of the Pathological Department of Columbia University, writes: "The good service which the article on phthisiophobia does deserves the support and consideration of all men interested in medicine, and more especially in the broader humanizing aspect of this question."

Dr. A. H. Doty, the Health Officer of the Port of New York, writes me: "As you probably know, I have already publicly expressed my opinion regarding the ruling made by the Commissioner of Immigration in regard to the return of immigrants affected with tuberculosis who may reach this port. It is known that I am decidedly opposed to it. I shall be glad to have you mention my name in your introductory remarks on February 6th, and also to state that while in Washington next week I shall do all I can to bring about a repeal of the obnoxious ruling recently made by the Commissioner of Immigration."

Prof. Prudden wrote: "I regret that I can not be present at the meeting of the Academy of Medicine and so shall not be able to speak as I should like to do in favor of the resolutions concerning the ruling of the Treasury Department on tuberculosis. I think that the resolutions admirably cover the ground of a dignified and earnest protest. It is, indeed, discouraging that the advice upon which the Treasury Department of the United States appears to have acted in this matter, in this period of growing enlightenment regarding infectious disease in general and tuberculosis in particular, should ignore the revelations of two decades of beneficent research, and imply so crude a conception of the solution which modern science has to offer to this serious problem of preventive medicine."

I could continue thus in quoting from the letters of approval which I have received, but I trust that this will suffice at least to show that these resolutions are not a one-man opinion. I will ask permission to read only one more extract of a letter. I have kept it for the last because I treasure it most, for it comes from the gentleman who honors us to-night by presiding over this assembly. Prof. Peabody says: "As I do not from the Chair feel justified in taking part in the discussion, I should be glad to be referred to as strongly favoring the sense of your resolutions when you next take the floor in their support."

It only remains for me now to read the resolutions to you once more.

Upon the advice of elder and more experienced members of the Academy, some of whom belong to the Council, I present these resolutions tonight somewhat shortened and slightly changed in their wording.

Whereas, The Treasury Department of the United States, upon recommendation of the Surgeon-General of the Marine-Hospital Service, has recently decided to classify pulmonary tuberculosis with dangerous contagious diseases, be it

Resolved, That the New York Academy of Medicine deeply deplores this decision, which is not based on either clinical experience or on scientific experiments.

Resolved, That the Academy considers the exclusion of non-pauper tuberculous immigrants and consumptive aliens visiting our shores unwise, inhumane, and contrary to the dictates of justice. Be it further

Resolved, That, while the Academy is convinced of the communicability of tuberculosis and urges all possible precautions against the spread of the disease occasioned by sputum and tuberculous food, the Academy is opposed to all measures by which needless hardship is imposed upon the consumptive individual, his family, and his physician.

These resolutions were submitted to the New York Academy of Medicine on January 2d. In compliance with the laws and regulations of the Academy they were referred to the Council and held over for action until the next meeting, which took place on January 16th. At that meeting the resolutions were seconded by Dr. Edward G. Janeway, and the discussion brought out the desire to hear directly from the Treasury Department before voting upon them. Upon motion of the author of the resolutions, action on these was deferred until the next meeting so that the Secretary of the Academy could write to Washington for additional information. The answer of the Treasury Department as quoted was received in due time. The resolutions were put to vote at the regular meeting of the Academy of February 6th and were finally adopted. The Secretary of the Academy was instructed to forward a copy of the resolutions to the Treasury Department, the Surgeon-General of the Marine-Hospital Service, and to the Secretary of the New York State Medical Society.

It may not be without interest to add to this second chapter on phthisiophobia a few explanatory notes, and also to show the attitude which our highest official, the President of the United States, Theodore Roosevelt, takes in this matter. As it will be recalled, Mr. Francis Tracy Tobin, of Philadelphia, appeared several months ago before the United States Circuit Court in Brooklyn on behalf of Thomas P. Boden, a well-to-do Irish immigrant, who had been detained by the immigration authorities because he was suffering from pulmonary tuberculosis. My testimony to the effect that pulmonary tuberculosis was not a dangerous contagious, but only a communicable, malady, that the contact *per se* could not transmit the disease, and that ordinary precautions with the patient's sputum and other secretions would suffice to do away with all danger of infection was overruled by the Judge upon motion of the counsel for the Government. Exception was taken by Mr. Tobin for the purpose of enabling him to bring this matter before the Supreme Court of the United States for decision.

Upon the request of Mr. Tobin I gave a written opinion on the aspect of the case, quoting also the various European and American authorities on the subject of the communicability of pulmonary tuberculosis. Mr. Tobin enclosed a copy of this opinion in a direct appeal to the President of the United States, and Mr. Roosevelt immediately issued an order for Boden to land. I hope that this example of our honored President will put a stop to all further manifestations of official and private phthisiophobia.

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INTRAVENOUS INFUSION OF SALINE SOLUTION.[1]

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It is well known clinically that certain cases of shock are not much benefited by saline infusion. The effect of the solution at varying temperature, the cause of death following excessive infusion, the dilution of blood, the effect upon respiration, the effect in shock and in normal animals and other phases of the question were taken up.

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[1] The protocols of the sixty experiments on dogs, of which the following is a summary, are published in full in the original essay.

SUMMARY OF EXPERIMENTAL EVIDENCE.

In the following group the infusion was continued until death.

Circulation.—The intravenous injection of saline solution at or near normal temperature into the circulation of the animal, from a height producing a pressure greater than that of the blood, usually caused a rise in the blood-pressure. The beginning of this rise appeared as soon as the force of the stream was added to that of the circulation. The rise was sometimes abrupt, sometimes gradual, appearing at once or after a lapse of a short time. In almost every instance a point was soon reached above which no amount of saline solution, irrespective of the height to which the bottle was elevated, could raise it. As a rule the increase in the height of the blood-pressure was but slight, varying from two to six or eight millimeters of mercury. In a small number of the experiments there was immediate temporary fall. This was usually rather abrupt, and in every instance a recovery to the previous level was made or the pressure rose even higher.

The character of the heart strokes in many instances was not altered; but, in cases in which it was, an increase in the length of the stroke occurred. The frequency of the heart beats was usually diminished. The general characteristics of the blood-pressure appeared from the time at which it reached its maximum height, after the beginning of the flow, to the time when the beginning of the final decline occurred. The curve was remarkably even; if at the beginning of the flow the curve was irregular, the saline injection usually prevented its continuation, establishing a mean level. When, as a result of the continuous flow, death was produced by an excessive amount, the beginning of the death phenomena was marked by the gradual decline in the blood-pressure, and in no instance was it possible to stop such downward tendency. The heart beats composing this curve were characterized by their becoming for a time increasingly longer, then gradually shorter, until the last beat. The frequency was generally diminished from the beginning of the final decline, and if, during this descending curve, the animal executed a respiratory movement, even though it were but a gasp, a very marked alteration in the blood-pressure curve was produced, that is to say, the final descending curve presented the essential characteristics of death from asphyxia.

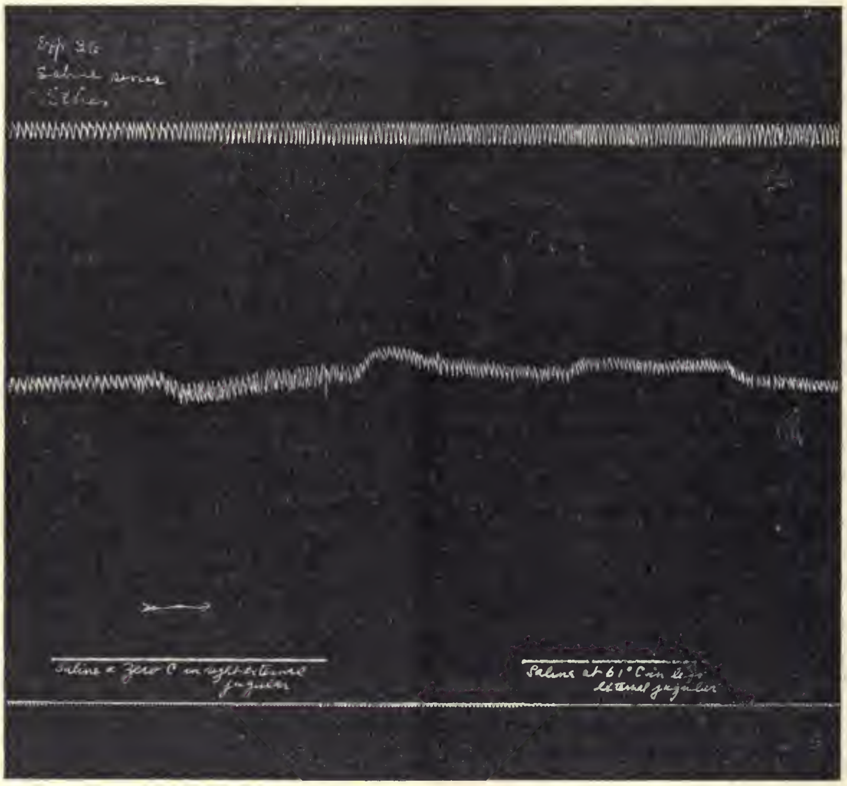

Fig. 1—a, respiration; b, blood-pressure; c, signal; d, seconds. Note the contrast between the effect of injecting cold and warm solutions. The first effect after injecting the cold is a fall in blood-pressure and an increase in the length of the stroke, the pressure quickly rising after cessation of the flow. The hot solution caused an immediate rise, followed by an equal fall on cessation of the flow. The final effect the same.

The preceding remarks apply to the experiments in which normal saline solution at the temperature of the body was given to normal animals in a continuous injection until death. If at any time after a sufficient amount of saline had been administered to raise the blood-pressure to the maximum, the animal's foot was burned or other injury inflicted, an additional rise would follow; this rise, however, was not so high as in the cases in which no infusion had been previously given. It was also observed that the inhalation of even a few drops of chloroform caused an immediate but gradual fall in the blood-pressure, occasionally marked. Ether, as a rule, produced no change in the blood-pressure. The effect of chloroform was the more marked the greater the amount of saline previously given. As to the effect of admisistering the saline at different rates of flow, the more rapidly it was introduced, the more quickly the blood-pressure reached the highest point in that particular case, but the final height was the same. When introduced with great rapidity the animal, though under full surgical anesthesia, would respond in a peculiar subconscious way, showing a tendency to struggle.

The Effect upon the Blood Itself.—On making blood-counts by means of a Thoma-Zeiss instrument before and during the saline infusion a decrease in the number of red cells was usually shown. The blood-counts, however, exhibited a great variation in the different experiments. In two they showed an actual increase in the number of red cells, but, as a rule, the number fell, generally from 20 to 25 per cent. The blood-counts, though very carefully made, in the same experiment at different stages showed varying results, and in some instances after considerable diminution there would be a secondary increase. The variation in the blood-count was not proportional to the amount of infusion. The tendency to clot seemed to increase with the infusion; this was especially marked in the blood from the liver, in which the color grew darker from the time of the beginning of the final descent of the blood-pressure until the end; earlier its color was a lighter red. There was a very marked increase in the tendency to hemorrhage especially from the small vessels. Wounds made before the introduction of the saline and which had become dry began to ooze soon after the beginning of the infusion. The temperature in many instances was slightly raised. The foregoing applies to a dog under surgical anesthesia in which normal saline solution at the temperature of the body was allowed to flow until death occurred.

On Respiration.—The respirations were increased or diminished according to the circumstances. If saline was introduced rapidly, the alteration both as to increase in frequency and in the amplitude of the stroke was more decided. This increase did not continue, but after a period of time corresponding fairly well with that allowed for the circulatory changes to reach their maximum the respiratory rhythm returned nearly to the normal. As the animal became increasingly under the effect of the infusion, the respirations decreased in frequency while the amplitude of the excursions increased. The abdominal factor of respiration gradually diminished until it was lost, and the costal factor alone assumed the burden. This factor soon began to fail, death ensuing. When once this tendency was inaugurated, it continued until the end. In every instance after the appearance of these phenomena death ensued without even a temporary improvement. During the latter part of this period the extraordinary muscles of respiration were brought into action, the respiration becoming gasping. The respirations always failed before the heart; all the animals died of respiratory failure. The characteristic decline of the blood-pressure curve, referred to under the heading "Effects upon the Circulation," were inaugurated after respiration had ceased, *pari passu*, with the development of the later saline phenomena. Coarse, moist râles of varying intensity developed, which were first heard most distinctly over the pulmonary bases, then over the entire chest, and later could be heard when standing near the dog board. During this stage of the experiment dulness over the pulmonary bases developed, extending afterwards over other portions. In the greater number of the experiments the tracheal cannula became filled with

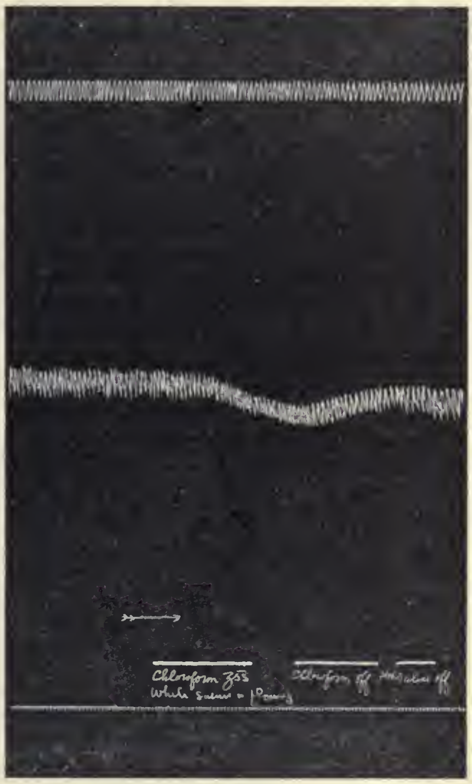

Fig. 2—a, respiration; b, blood-pressure; c, signal; d, seconds. While the saline solution was flowing into the jugular, one-half dram of chloroform was administered. Note the marked fall in the blood-pressure during the inhalation and the compensatory rise following the removal.

fluid having a consistence varying from tenacious to watery; sometimes it seemed to consist of bloody serum, at other times of a frothy mucus. In some instances this fluid collected in such quantities as to materially interfere with the respiratory action, making it necessary to tilt the dog board and turn out the fluid.

Effect upon Tissues and Organs.—There was an increased amount of fluid in the skin. The muscles of the extremities contained a slightly increased amount of fluid and those of the trunk and neck were decidedly more edematous. The connective tissue was more moist than normal and occasionally was emphysematous. The heart was always in diastole, the chambers widely distended and usually filled with clots. No fluid was in the pericardium. The heart muscles were somewhat edematous. The venous trunks were everywhere distended, imparting to the touch the sense of a decidedly increased tension. The smaller veins also were distended, especially the mesenteric and the subcutaneous. The capillaries and the smaller vessels of the gastro-intestinal tract almost disappeared. In the lungs, underneath the capsule of the kidney and in the walls of the stomach there was in many cases capillary hemorrhage. The same was noticed, in some instances, under the coverings of the brain. The arterial system was not distended. The portal circulation was greatly engorged.

Respiratory Tract.—The mucous membrane of the nose was edematous and usually bathed in mucus. During the latter stages mucus discharged freely from the nose. The mucous membrane of the trachea was edematous, being more or less filled with clear, though more frequently with bloody fluid. In almost every instance the lungs were edematous and ecchymosed, the edema and ecchymosis being most marked in the bases, diminishing over other portions. The ecchymosis varied in intensity. In some instances the bases were extremely dark, soggy, heavy, and when fragments were thrown into the water they floated very low. On incising them, quantities of frothy, bloody fluid escaped, but in some the fluid was quite clear. Frequently fluid was found in the pleural cavity. This fluid in many instances was bloody.

Alimentary Tract.—The mucous membrane of the mouth was thickened and edematous, and there was a free discharge consisting of a mixture of a watery fluid and mucus. In some instances there was a free discharge of fluid which probably came from the stomach. The pharynx, esophagus and stomach were edematous, the mucous membrane being especially thickened. The stomach in every instance was much distended with watery fluid, its wall was considerably thickened, and usually the mucous membrane and the serous surfaces were pale, though more frequently white. The wall was so edematous that on incising it its histological layers were to a considerable extent separated and watery fluid oozed from its cut surface. The cavity of the stomach was more or less filled with watery fluid. The small intestines were white, their walls much thickened and edematous. On incising them the histological layers were well separated and fluid oozed from the cut surface. In almost every instance their lumen was filled with watery fluid. The large intestine presented like conditions, though decreasing toward the anus. There was free fluid in the peritoneal cavity, in some instances a large quantity. In many of the experiments the intestines and stomach were so filled with fluid that it escaped from both the anus and the mouth.

Liver.—The liver in most instances was hard and greatly enlarged. On making incisions, large quantities of diluted blood escaped, at times spurting. Even when the incision was made at one point the entire liver decreased in size *pari passu* with the flow, and the hardness disappeared.

Gall-Bladder.—The gall-bladder was usually filled with bile.

Spleen.—The spleen usually contained more fluid than normal.

Pancreas.—The pancreas was in most instances enlarged and edematous.

Urinary Tract.—The kidneys were but slightly enlarged; on incising them considerable pale fluid escaped, especially from the pelves. Occasionally there was ecchymosis underneath the capsule. The ureters were somewhat enlarged. When the experiment was continued for a length of time the urinary bladder was usually extremely distended, but its walls were not edematous. In shorter experiments there was no distention.

EXPERIMENTS IN WHICH THE ABDOMINAL AORTA, INCLUDING THE SPLANCHNIC ARTERIES, OR IN WHICH THE LATTER ALONE, WERE CLOSED.

In this series of experiments, in which either the abdominal aorta or at least some of the splanchnic vessels were closed before the saline solution was allowed to flow, death ensued before an equal relative amount of the solution had been given; that is to say, the normal dog could take much more saline than an animal whose splanchnic area had been excluded by closing the supplying vessels. Pulmonary edema developed. The animals died of respiratory failure, the blood usually became cyanotic. In most cases the heart showed the effect of asphyxia by beating more slowly, but very strongly. The circulatory phenomena were virtually the same as in the experiments in which the aorta and the splanchnic vessels had not been clamped. Respiratory failure occurred first. On making blood-counts it was found that in the cases in which the splanchnic circulation had been modified or arrested by clamping one or more of the supplying vessels the number of red blood-cells was strikingly diminished. This was in marked contrast with the moderate change occurring in the experiments in which such exclusion had not been made.

At the autopsies in this series of experiments no alterations were found in the abdominal viscera. There was no free fluid in the abdominal cavity. Usually the intestines were cyanotic. The stomach, when its blood-supply had been excluded, remained normal, but it was noted in these cases that there was in the stomach and in the intestines a peculiar dark, bloody, gelatinous fluid which adhered closely to the mucous membrane. The walls of the hollow viscera were not thickened as in the other experiments. In comparison with the fore extremities, the hind were quite dry. The heart was pale, the pericardium containing some fluid. The heart stopped in diastole; the chambers were filled with diluted blood and there was considerable pressure in the aorta. In almost every instance the lungs were extremely edematous, much more so than in the experiments in which splanchnic blood-supply had not been excluded. Death in every instance was due to asphyxia, as in the first series.

Effect of the Varying Height of the Saline Column.—A series of experiments was made upon the effect of allowing the solution to flow from different heights. It was found that increasing the height of the bottle but slightly increased the blood-pressure. Great irregularity was noted in the change of the blood-pressure; in some instances there was but a slight rise, in others considerable. In the same experiment, at different times, the rise in the blood-pressure might not be equal to that produced by an elevation made earlier or later; that is to say, there was no direct ratio between the elevation and the rise in the blood-pressure, neither was there any ratio between the rise and the amount of saline the dog had received previous to the elevation of the bottle.

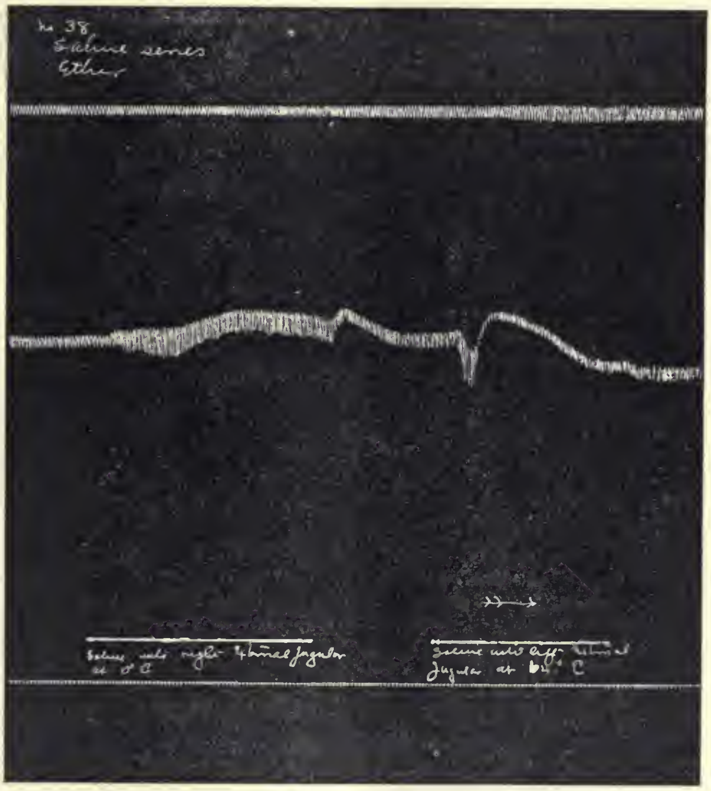

Fig. 3—a, respiration; b, blood-pressure; c, signal; d, seconds. Note the diminished rate and the increased length of stroke following the infusion of saline solution at O°C. On cessation the blood-pressure rose above the previous level, finally taking about the former level. After infusion at 64° C., there was an immediate fall, with temporarily slowed beat and elongated stroke, after which there was a rapid rise, short strokes, followed by a compensatory fall to the previous level.

Some Drug and Other Effects.—After a considerable amount of saline had been infused, the inhalation of chloroform, even in small dosage, produced a very marked depression on the circulation. Upon the administration of strychnine or nitroglycerin their usual physiological action was noted, though to a lesser degree.

Thermal, electrical and mechanical stimulation produced the usual effects. Burning or crushing the paw caused a rise in the blood-pressure and an increase in the respiratory rhythm, manipulation of the larynx, a reflex inhibition of the respiration and the heart, etc.

Effect of Varying Temperature, etc.—No matter what the temperature, the effects were eventually about the same. When the solution was cold, the heart beats were diminished and the strokes became longer. Frequently at the beginning there would be a fall in the blood-pressure, after which the usual rise observed in all saline infusions would occur. If the lost pressure was not regained during the flow, it was immediately regained on cessation of flow, with a return to the previous rapidity and length of strokes. Hot saline produced the opposite effect, *viz.,* an increase in the rapidity and a diminution of the length of the strokes, with a rise in the pressure. On cessation of the infusion the strokes would resume their former rate and length and the blood-pressure would fall to its previous level. The results were ultimately about equal. Even extreme variation in the temperatures of the solution produced but minor alterations in the temperature of the body. The effects of saline infusion were almost wholly mechanical and physical; within a reasonable range they were independent of variation in the temperature, the rate of flow, the height above the animal, and the vein into which it was introduced. The mechanical factor consists in adding the force of the infusion to the force of the venous blood-stream, which raises the venous blood-pressure, thus increasing the output of the heart. The amount of the output has been proved to be dependent upon the venous blood-pressure.

One of the reasons why the infusion did not raise the pressure indefinitely was the escape of the solution from the circulation at a rate corresponding to the rate of the infusion. The escape occurred principally through the structures that normally absorb fluids, *viz.,* the gastro-intestinal tract, to a much less extent through the mouth and respiratory tract and still less into the tissues of the somatic area. The rate of escape of the saline solution through these channels almost equaled any rate of introduction we were able to devise. This was substantiated by numerous blood-counts, showing that after a certain dilution had been reached the count remained about the same. A secondary increase of blood-corpuscles was shown, although an enormous amount of saline was introduced during the observations, but in the experiments in which the splanchnic area had been previously excluded, by closing the splanchnic vessels, the dilution increased *pari passu* with the flow, strikingly diminishing the number of red blood-corpuscles. In these cases, the bronchopulmonary tract eliminated larger quantities than it did in the experiments in which the "leaky" gastro-intestinal tract had not been excluded.

It might be supposed that in the experiments in which the great channel of elimination—the gastro-intestinal tract—had been excluded by closing the supplying vessels, the blood-pressure would be raised higher than in the other experiments, but this was not observed. Neither was it found that the administration of an excessive amount of saline materially interfered with the response of the heart or the vasomotor mechanism to stimuli, as proved by the reflex inhibition from laryngeal manipulation, or crushing and burning the paws, by the administration of strychnine and nitroglycerin as well as by the compensation that occurred on tilting the board.

Conclusions.—The foregoing applies to the normal dog under surgical anesthesia. In experiments in which the blood-pressure had been lowered by a reasonable hemorrhage alone, saline infusion promptly restored the lost pressure. If the pressure had been lowered by the exhaustion of the vasomoter nervous system by afferent impulses set up by an injury of the cerebrospinal or the sympathetic nervous system, the infusion would restore the pressure in proportion to the vasomotor exhaustion; that is to say, normal saline solution is effectual in shock in proportion to the impairment of the vasomotor mechanism. If this mechanism has gone into resolution, infusion is without curative effect. If the impairment is considerable, the infusion will partially restore the pressure, etc. Taking into consideration all the facts, the reason why the blood-pressure is raised but little, if at all, higher than the normal is due to the rapid escape of the fluid from the vessels and the action of the automatic mechanism in the medulla, which when the pressure rises above the normal diminishes the force and the frequency of the heart beats and lessens the vasoconstriction in the area of peripheral resistance, reducing the pressure to the normal level. The peripheral resistance determines the height of the blood-pressure, no matter how swift the stream nor how great the volume of blood. The limitations of the effect of normal saline infusion must now be apparent. If the peripheral resistance is lost (breakdown of the vasomotor mechanism; that is to say, fatal "shock"), no amount of infusion can do more than temporarily and but partially restore the blood-pressure and death is inevitable. If the shock is much increased by regional accumulation of blood (so-called intravascular hemorrhage), as in operations on the splanchnic area, infusion may be effective because the peripheral resistance is still present; that is to say, the vasomotor mechanism has not gone into resolution. If hemorrhage complicates shock and the vasomotor mechanism is still intact, infusion is effectual. Such propositions may be multiplied.

The foregoing deductions explain why certain cases of shock are frequently but little, if at all, benefited by saline infusion. It is true that in almost every case an artificial pulse may be produced, even a pulse of considerable volume, but it is without resistance. It will disappear almost as quickly as it came, and no amount of infusion will sustain the circulation in such a case because the vasomotor mechanism has gone into resolution, destroying peripheral resistance: hence no blood-pressure can be created

Illustrative Case.—Brakeman, aged twenty-five years, in previous normal health, as proved at autopsy. Was thrown under the trucks of a railway carriage, losing both legs above the knees. There was considerable hemorrhage. *Circulation:* Pulse 152, small volume, rhythmic, slight tension. Nails bluish; small superficial veins of chest and abdomen prominent; blood-vessels of the lips and face distended and of venous color, giving a cyanotic pallor; pulsation in the neck marked, indicating toneless vessels; surface moist and cold, presenting bluish tinge. *Respiration:* Rate 39; inspiratory phase quickened and shortened; expiratory phase, relatively lengthened; pause increased; extraordinary muscles in light action; slight rhythmic movement of the larynx and alæ nasæ. *Nervous system:* Mind clear and alert; special senses acute; complains but little of pain; is restless and begs for water.

Discussion of the Physiological State.—The massive mechanical irritation and exposure of the nerve-endings and nerve-trunks produced an excessive action of the vasomotor and cardiac centers, especially the former, leading to exhaustion. Proportionately to the degree of exhaustion, the "peripheral resistance" is diminished. Proportionately to the diminution of peripheral resistance the general blood-pressure is lowered and the venous return diminished. Proportionately to the diminution of the venous return the output of the heart is diminished, and proportionately to the diminished output of the heart the volume of the pulse and the general blood-pressure is diminished. This "toneless" state of the vascular system, then, is mainly due to the loss of the "peripheral resistance," which in turn is due to the exhaustion of the vasomotor mechanism, which is due to the excessive stimulation, owing to massive mechanical irritation of the nerve-supply of the lower extremities, by the wheel of a car. In this toneless state the larger arterial trunks are relatively empty so that the blood thrown into the arterial trunks with each contraction of the heart produced a high but short wave. accounting for the marked pulsation in the arteries of the neck; the wave, then, when it reaches the extremities (*e.g.,* radial pulse) is proportionately diminished, is abrupt in ascent, is not sustained, and has proportionately lost its resistance. The capillary circulation is correspondingly diminished, producing the pallor which, together with the loss of heat by perspiration, produces the cooling of the skin. The diminution of the capillary pressure proportionately lessens the venous flow, thereby causing an accumulation of blood upon the venous side, which accounts for the prominence of the small superficial veins and the bluish tinge of the skin, "cyanotic pallor." The blood-pressure is diminished and the heart beat is increased in frequency. (There are many important questions that this discussion has opened, but as they are not pertinent to our present inquiry they will not be discussed.)

The respiration is increased in frequency in accordance with a well-known law governing its automatic centre, *viz.*, the diminution of oxygen in the blood causes an increased respiratory action, and when the blood reaches a certain degree of cyanosis the extraordinary muscles of respiration are brought into action whether obstruction is or is not present. There being no obstruction present and the extraordinary muscles having no resistance to overcome, their work is so light as to give but little evidence of their action, the inauguration of their action being rather an indication of the degree of cyanosis which, in turn, indicates the degree of circulatory failure. The amount of blood under these conditions actually circulating through the lungs is proportionately diminished, which would be in effect a hemorrhage—an intravascular hemorrhage. The effect upon the respiratory mechanism is essentially the same as in an actual external hemorrhage. Owing to the diminished nutrition and excessive action the respiratory mechanism becomes fatigued, the earlier indications being an increased pause and a quickened inspiratory phase.

During twenty minutes 2,000 cubic centimeters of normal salne solution at 100° F. was infused into the median basilic vein. (Other features of the case will not be discussed.) The pulse was reduced in frequency to 124. The volume was fully as large as normal, the ascent of the wave was abrupt, the fall equally so. The tension remained low. The patient perspired freely and was less restless. Cyanosis diminished. Superficial veins remained about the same. Pulsations at the neck were more marked than before. The patient was not so restless. There was an improvement in most of the symptoms, but what of the vasomotor mechanism? The ascent and descent of the wave was as sharp as before. There was an enormous increase in the volume but only a slight increase in tension.

These several phenomena show that the vasomotor impairment and impending break-down still existed. Though a large pulse was artificially created, the patient's chances for recovery were virtually what they were before. The effects of the saline solution gradually passed away, and an hour later another saline infusion of 1,500 c.c. was slowly given. This time the effects were not so marked and were less sustained than in the preceding. All of the symptoms rapidly grew worse and the patient died at the end of four hours. After the first infusion had been given, oxygen was administered; during its administration respirations were diminished in frequency and the cyanosis was lessened. The participation of the extraordinary muscles of respiration was diminished.

This discussion has been extended for the purpose of defining a well-marked and fairly-characteristic group in which saline infusion is of but temporary aid and in which it does not alter the essential conditions present. The vasomotor break-down is an impairment that cannot be relieved by saline infusion. Drugs are equally ineffective in these cases for the same reason that, although the heart may be stimulated, there being no peripheral resistance, no blood-pressure (pulse) can be created and death is inevitable. Drugs having action upon the vasomotor mechanism are equally powerless, because, this mechanism having become exhausted, it cannot respond. This also gives a clear reason for the benefits of infusion in cases of hemorrhage alone or hemorrhage with shock, by restoring the normal volume of fluid and adding force to the venous stream.

In shock (vasomotor impairment, *i.e.*, lowered peripheral resistance) the benefit is due to the force added to the venous circulation. The venous pressure falls *pari passu* with the diminution of the peripheral resistance (vasomotor impairment, shock), so that the saline infusion supplies to the venous blood-pressure force which the decreasing peripheral resistance does not ordinarily supply. It must be borne in mind that the output of the heart is wholly dependent upon the venous pressure; that is to say, the infusion may merely tide over a circulatory crisis during which other means for restoring the circulatory equilibrium and tone must be employed. In cases of dangerous hemorrhage the combination of oxygen inhalation with infusion is beneficial, because the reduction in the number of corpuscles so diminishes the amount of oxygen carried that it should be supplied in concentrated form, which by virtue of the law of diffusion of gases increases the volume's percentage of oxygen in the blood.

THE RIGHT AND WRONG USE OF DIGITALIS BASED ON CARDIAC PATHOLOGY.

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IF we are to understand thoroughly the action of a drug we must first clearly comprehend the pathological process that we are attempting to assist Nature to modify. This is especially true in connection with the heart and the therapeutic management of this organ when the seat of disease. It seems to me that we have too often lost sight of the physiology and pathology of this important organ in the application of our therapeutic remedies. We have too often regarded the heart purely as a mechanical pump and have thus lost sight of the most important factor, the law governing its nutrition. This law of nutrition, which it is always well to keep clearly in mind in connection with the treatment of all pathological process, is that nutritive interchange between the constituents of the blood and the protoplasm outside the blood-vessels occurs only during the passage of the blood through the arterial capillaries. When the arterioles are highly contracted the arterial capillaries are also in a state of high tension; the blood is driven rapidly over into the intermediate and venous capillaries, where nutritive interchange ceases, and little or no time occurs for nutritive interchange in the arterial capillaries; hence death local or general speedily ensues. When the arterioles are moderately expanded the arterial capillaries are in a state of physiological low tension and nutritive interchange between the blood-stream and the surrounding structures is at the maximum physiological point. By a rise and fall in the tension and an increase or decrease in the speed of the blood through these arterial capillaries, the nutrition is augmented and depressed in accord with the natural demands upon the protoplasmic elements outside the blood-vessels. Augment the tension beyond a certain point and nutrition will fall below the physiological standard; atrophy and death will follow if this high tension be unduly prolonged. Depress the tension and speed of the blood slightly below the physiological limit and we have hypernutrition. If the augmented nutrition is distributed chiefly to the higher cells, as the muscle—for instance, in the heart—we have hypertrophy; if to the lower cells or the connective tissue binding the higher cells together we have a sclerotic condition or that which has been erroneously termed interstitial inflammation, for both are non-inflammatory processes. If on the other hand the tension is still further reduced, a condition of partial stasis occurs and this in turn will arrest nutritive interchange. Thus we find that too high and too low tension in the arterioles and arterial capillaries will arrest nutritive interchange. Between these two extremes we have slightly augmented and depressed tension, the former causing atrophy and the latter multiplication of the proteid constituents outside the blood-stream or hypertrophy. Between these two intermediate points there is the normal rise and fall in the tension and speed of the blood, which when not exceeded gives the normal physiological state and the tissues or organs remain normal.

With this brief review of the vascular law governing nutrition we can better understand the pathology of the heart and the action of therapeutic agents and especially the right and wrong use of that often misused drug, digitalis.

Let us begin our consideration of the pathology of the heart by a study of that lesion commonly but inappropriately called myocarditis. This term, like many others terminating in "itis," is made to cover a multiplicity of conditions in which none of the true and typical phenomena of inflammation is present, hence the misuse of the term myocarditis. Because a term is improperly used is no ground for its displacement from our nomenclature. On the other hand, it should be retained, but restricted in its meaning to one condition, which is that in which the true phenomena of inflammation is present. Myocarditis should be limited to that condition in which, by some extrinsic or intrinsic cause, an injury is brought to bear upon the capillary vessels in the muscular substance of the heart—an injury which is sufficiently great to destroy the normal functional activity of these vessels. Following such injury there is a temporary spasmodic contraction of the vessels, which is followed by progressive dilatation with partial or complete stasis, a migration of the white blood-cells from the lumen of the blood-vessels into the perivascular spaces, and an exudation of all the constituents of the blood into these same extra-vascular spaces. When all these changes occur, then we have a condition deserving the name myocarditis, and it is only in such instances that the term should be used. Such a condition may be brought about by an extension of an inflammatory process which originated, for instance, in the pericardium. In fact, with every active pericarditis there is a moderate involvement by the same inflammatory process of the muscular structures directly underneath. If this extension be at all great, death speedily ensues. The muscular tissue of the heart is occasionally the seat of a true inflammation in connection with a pyemic or septicemic condition. In the former instance, multiple abscess may be found in the heart substance. True inflammation of the heart, no matter how caused, is exceedingly rare, and ends, in a few days, by death of the patient so afflicted.

When we come to the consideration of hypernutritive conditions, and retrograde changes in the muscle fibers, then an entirely different problem confronts us. These are changes that should never be classed under the term inflammation. To understand these retrograde processes clearly, we must have an accurate conception of the normal nutritive activity, not only of the heart muscle, but of all muscular tissue. All protoplasmic nutritive activity consists in an isomeric transmutation of the proteid molecules with an increasing or decreasing multiplication of these molecules in the substance of the various tissues of the body. If there is a mechanical multiplication of the proteid molecules in a muscle fiber, for instance, we have the plus side of physiological activity, as Virchow has expressed it, to deal with. On the other hand, if there is a progressive decrease in their number we have the minus side. This absorption from the blood into the muscle fiber, with an isomeric change in the molecules and their discharge from the muscle substance into the lymph-stream, is unquestionably the chemical phenomenon that constitutes our muscular contraction. If for any reason the proteid molecules be taken up into the muscle more rapidly than they are isomerically transformed and discharged therefrom, and provided this process is not carried too far, we have the condition known as the plus side or physiological hypertrophy. On the other hand, if the proteid molecules be discharged from the muscle fibers more rapidly than they are introduced, we have the minus side of physiological activity, or the condition sometimes called physiological atrophy. Carry either one of these phenomena beyond a certain limit, and the process becomes a pathological one.

By this same law of isomeric transformation, with an increasing or decreasing number of proteid molecules in the muscle fibers, we can easily appreciate how the muscle may be changed from its normal integrity to one having a mucoid, hyaline or granular consistence until, finally, it becomes absolutely pathological in its isomeric or chemical composition. Prior to this pathological change, the proteid elements contained in the muscle fibers resist the absorption of oxygen from the blood into their substance, and hence oxidation reduction of the proteid molecules in the muscle substance never occurs normally, the change in the proteid elements forming the muscle structures being confined absolutely to that of isomeric transformation. When for any reason the isomerism deviates from the normal and causes the proteid elements within the muscle to assume a pathological condition, then their chemical state is changed until it resembles that of the protoplasmic masses in which oxidation reduction is known to take place normally, as, for instance, in the hepatic and renal cells. This pathological condition having been reached by the law of vicarious action, oxygen is drawn into the substance of the muscle fiber and then directly attacks the abnormal proteid molecules in the muscles, causing them to undergo oxidation reduction. In some instances the oxidation results in the formation of pigment matter, which is produced directly from the splitting up of the proteid molecules in a manner similar to the formation of bilirubin and biliverdin in the liver by the oxidation of the proteid molecules in the hepatic cells. In other instances it is attended with the formation of fat molecules as a product of this imperfect and vicarious oxidation of the proteid molecule in the heart muscle. The peculiar granular changes sometimes observed in the heart muscle may be due to one of two changes: irregular isomeric transformation of the proteid molecules with an increasing or decreasing number of molecules, but without oxidation; or it may be due to this vicarious oxidation with the formation of ozidation reduction products, which may be colored pigment particles or minute fat molecules. In the former instance, there may be a complete and rapid restoration of the muscle fibers to their normal condition; in the latter, it is doubtful if complete restoration can ever be brought about. It certainly cannot if the fatty degeneration be at all extensive, thus impairing greatly the nutritive integrity of the proteid structures. With a decrease in the number of the proteid molecules or an oxidation reduction of the proteid elements, there is a decease in the volumetric space occupied by the muscle; this allows a larger volume of blood to flow in between the muscle fibers than normally occurs. This will cause a plus nutritive activity of the simple connective tissue cells between the muscle fibers. When this occurs, there is an increase in the cells and fibers that constitute the connective tissue between the muscle fibers, and that condition is produced which is inaccurately called a chronic interstitial inflammation of the heart, or chronic myocarditis. Strictly speaking, it is a chronic sclerosis of the heart, and in no sense an inflammatory process. It is the result of the battle constantly going on in the animal economy between the higher or noble cells and the lower or ignoble cells, which is most accurately described as follows by Metschnikoff, in his admirable article entitled "What is Old Age?" (*St. Petersb. Novisti*).

According to Metschnikoff, "Every organ of our body is composed of two kinds of cells—common, and, as it were, noble cells. The noble cells determine the peculiar functions of the organs. . . . The common cells do not differ from one another, they are identical in all the organs, and their only function is to connect and hold together the noble cells.

"Between these two kinds of cells there goes on an incessant struggle. The noble cells are stronger, and for a long time they prevail; *i. e.*, they successfully resist. But eventually the struggle exhausts them, and the preponderance passes to the common cells. This signalizes the beginning of old age. The noble cells are crowded more and more, the common ones growing in size at their expense and interfering with the functions of the organ. Hence the abnormal diseased appearance of the organs, and the increasing difficulties in the way of living. Ultimately the performance of the functions becomes entirely impossible, and we have death."

Metschnikoff gives the term *macrophagi* to the connective-tissue cells, while the noble cells—epithelia and leucocytes—he calls *microphagi.*

This is but a modification of the theory in reference to histological changes in Bright's disease advanced by Weigert in 1879, and accepted by Cohnheim and C. Wagner, which is to the effect that connective-tissue proliferation is, in most cases, secondary to and excited by destruction (degeneration) of the renal epithelial elements.

When we are dealing with the heart, the muscle fibers represent the noble or special functionating cells, while those constituting the intermuscular structures represent the ignoble or connecting cells.

When we have an overfilling of the muscle fibers with proteid molecules (cloudy swelling) as the primary change, the intermuscular structures are abnormally compressed and their nutritive supply is decreased. This causes a minus nutritive condition of the structures between the muscles and an atrophic condition of the intermuscular planes. This is the condition of the overtrained athlete's heart. Hence the frequent and sudden deaths so often witnessed in this class of cases, when the overnourished muscle fibers which are associated with an atrophied state of the intermuscular planes begin to undergo retrograde changes.

In my opinion, it is these chemico-pathological changes in the muscle fibers, with an impairment in the nutritive activity of the nerves distributed to the heart, that cause the painful symptoms so commonly known under the name angina pectoris, all of which may occur without any macroscopical changes in the coronary arteries, and probably do occur in the majority of instances without marked lesions in these arteries. The statistics given by Dr. Satterthwaite[1] show that so far as necropsy findings are recorded a majority of the cases of angina pectoris do not have perceptible lesions of the coronary arteries alone. The two conditions may be found together, but the one is not necessarily dependent upon the other.

Another question is as to whether hypertrophy of the heart precedes or follows arteriosclerosis. It seems to me that this question can be answered in only one way: hypertrophy of the heart must always follow and never precede or act as an etiological factor in producing arteriosclerosis. The vascular tension may be augmented or depressed as the result of an intestinal putrefactive fermentation with a toxic infection of the system. The toxic products may be of such a nature that they will stimulate the primary vasomotor centers in the medulla and cause a general high tension; or, on the other hand, they will depress the nerve centers and cause low tension. If the former condition is prolonged for any length of time, together with active muscular exercise, there may be a plus nutritive activity in the heart to overcome the arterial resistance. If this condition should continue for any length of time, which is highly improbable, then a hypertrophy of the heart, so called, might appear, to the casual observer, to precede a sclerosed condition of the vessels; still the hypertrophy of the heart in this instance has resulted from the high tension of the vessels, and does not act as the etiological factor in producing arteriosclerosis. What more frequently occurs is a depression of the medullary centers, and in consequence thereof a dilatation of the capillary vessels distributed to the vascular walls is produced. This in turn is followed by an augmented nutritive activity both in the muscular or noble cell structures and in the connecting tissue or ignoble cells. As a result of the continuance of this augmented nutritive activity, both in the noble and the ignoble cells constituting the vascular structures, the elasticity of the vascular walls is destroyed by the former giving way to the latter, as already described. This loss of elasticity occurs long before the arteriosclerosis can be appreciated by the clinician. This loss of elasticity means increased resistance to the current of blood and calls for more work on part of the cardiac muscle, and thus there may be produced a certain amount of hypertrophy of the heart muscle prior to the development of the complete arteriosclerosis. The hypertrophy of the cardiac muscle developed in this manner may have led some observers to believe that the hypertrophy preceded and caused the arteriosclerosis. On the other hand, it is clearly apparent to the close observer that the vascular changes, as previously outlined, in all instances antedate and cause the cardiac hypertrophy. In a large proportion of the cases in which the arterioles become sclerosed early in life, it is highly probable that a syphilitic infection is the primary etiological factor in bringing about this condition, and must always be kept in mind in connection with the treatment. Not that syphilis is the sole cause, but it is frequently a potent factor in producing arteriosclerosis. Later in life syphilis is less likely to be the exciting cause. Here it is brought about by the giving up of the struggle by the noble cells as against the ignoble which constitute the walls of the blood-vessels, as outlined by Metschnikoff, that cause the arteriosclerosis and so-called atheromatous changes.

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[1] Tacchi, Gaz. Med. di Roma, 1890, vol. xvi., p. 97. Quoted by Satterthwaite, The Post-Graduate, New York, 1901, vol. xvi., p. 39.

During the pregnant state, or as the result of a reasonable amount of physical exertion, there is every reason to believe that a plus nutritive activity is excited in the cardiac muscle, as occurs in all other muscles under similar conditions. This will naturally cause an increase in the volume of the muscle, and that condition called physiological hypertrophy will be produced. Provided this augmental nutritive activity is not carried too far, when the cause for increased work on the part of the heart is removed the cardiac muscle will return to its previous volumetric condition.

In connection with our valvular lesions the same laws are at work. In the beginning Nature attempts a physiological augmentation of the nutrition of the muscle tissue to counterbalance the mechanical defect in the valve, and in so far as she succeeds, either alone or aided by the judicious administration of remedial agents, the defects in the valves are compensated for.

If, however, for any reason, or as occurs in the heart muscle of the overtrained athlete, or the compensating hypertrophy of valvular lesions, the increased nutritive activity be carried too far, then what might have been only a physiological process will pass into the pathological, and it may be very difficult to bring about a return to the normal state. Still, if the vascular and chemico-physiological laws that govern these physiological and pathological changes are accurately apprehended and our therapeutics is applied in conformity with these laws, the results obtained in some instances are almost miraculous. Hearts that at first examination seem to have passed beyond the point of repair are frequently brought back into a perfect physiological condition and continue to do good work for years. This, however, requires not only the use of remedial agents which act only on the heart and circulation, but equally as great care must be exercised in the dietetic and hygienic management of these cases; otherwise we shall fail to secure the desired results.

With this understanding of the chemico-pathology of the heart and the physiological laws governing its nutrition, the therapeutic action of digitalis can be more accurately interpreted.

To comprehend thoroughly the action of digitalis or of any drug, its chemical composition must be fully understood. At the same time, the laws that govern the action of all chemical compounds introduced into the system must be accurately apprehended and correctly applied to those that are introduced as medicinal agents. When this is accurately done, much new light is let in upon the action of our remedial agents. In this manner many a drug, so called, has been taken from the speculative and empirical class and transferred to the exact or truly scientific, thus raising the whole field of therapeutics to a higher standard. With digitalis there still appear to be considerable doubt and difference of opinion prevailing in regard to its mode of action, and also as to the therapeutic utility of this drug and its various preparations; some praising it highly while others condemn it vociferously.

Digitalis, like many other vegetable substances, appears to develop in its anabolic growth numerous chemical compounds, all of which are composed of the atomic elements, carbon, hydrogen, and oxygen, in varying proportions. This particular group of compounds has been classed as glucosides in contradistinction to those containing nitrogen, and which are, in consequence, known as alkaloids. The glucosides which have thus far been isolated and identified in connection with digitalis are digitalein, $C_{25}H_{40}O_{15}$; digitoxin, $C_{21}H_{32}O_7$; digitonin, $C_{31}H_{52}O_{17}$; digitalin, $C_5H_8O_2$; digitin, $(C_4H_9O_2)$. Exception is taken, however, to dixitoxin as a glucoside; still, in atomic construction it is very similar to the four which are classed as true glucosides. Why the digitoxin is excepted is not clearly stated, but it is probably due to the fact that when boiled with a dilute acid it does not yield glucose, which is the critical test for those substances designated as glucosides. Whether it be a glucoside or otherwise makes little difference so far as the chemical problem is concerned, for they are all composed of the same class of atomic elements, and being composed of the same class of chemical elements they are all amenable to the same chemical laws; all are oxidizable substances and they all yield the same products as the result of their oxidation-reduction, *viz.*, heat, carbon dioxide, and water. Owing to the varying proportions of these atomic elements, the amount of oxygen required to reduce each one will vary, as will likewise the amount of heat generated, both in amount and in the intensity of its action upon the various portions of the nervous mechanism. Of the five chemical compounds contained in the digitalis, four are said to influence the animal economy actively, while one, digitin, appears to be absolutely inert. Of the remaining four, three have actions in common, while the fourth absolutely antagonizes the other three.

Beginning our study of the action of digitalis with the powder, which is the simplest preparation to use, and one which does not involve the question of varying solubilities of the contained active ingredients, its action can be pretty closely analyzed. When this preparation is used there is introduced into the animal economy a substance containing chemical compounds capable of being oxidized, and, on the whole, it has a decided tendency to paralyze all the involuntary muscles.

So far as the nervous system is concerned, it is generally conceded that none of the active principles has any pronounced primary effects, yet, on the other hand, acting indirectly through the nervous mechanism or directly upon the heart itself, the contained active principles do not produce profound changes in the action of the heart and in the circulation.

Acting directly upon the heart, or through its nervous mechanism, the three active principles which have a similar action cause a more intense and shorter systolic contraction with a prolonged diastolic period. Synchronous with this effect upon the heart there is a marked contraction of the arterioles and a very pronounced rise in the blood-pressure. Following immediately upon these effects there is, at first, a marked decrease in the number of cardiac pulsations to the minute, which by some is said to be due to the direct depressing effect upon spinal accessory fibers distributed to the heart. A better explanation for the reduced speed of the heart is to attribute it to the increased resistance to the blood-stream in the arteries. This, coupled with the depressing effect of the digitonin upon the muscle fibers, easily explains the decreasing number of pulsations to the minute.

If the digitalis is continued the pulsations become more frequent and feeble, which is readily explained by the toxic effect of all the active principles. of digitalis upon all the involuntary muscles. The continued high tension in the arterial system tends also to deprive the cardiac muscles of their requisite nutrition. Thus, we find that at first the heart is called upon to do more work by the action of a substance that is all the time poisoning the muscle fibers, and, at the same time, its nutrition is being progressively cut off by the increasing high tension in the arterial system. A little later the toxic effects of the active principles of the digitalis begin to be felt in the muscle fibers of the arterioles; the tension relaxes, the heart becomes more feeble and irregular, and death ensues in diastole. While a very large dose of digitalis may cause a complete cessation of the heart's action in profound systole, the usual mode of death is as above described.

While the general arterial system is in a state of high tension, that of the splenic arcade remains normal, or is slightly lowered, unless an enormous dose has been administered; then, the latter, as well as the former, becomes contracted; however, this is a very rare occurrence. This, then, briefly stated, is the sum of the effects that can be produced upon the heart and circulation by the internal administration of digitalis and its varying preparations.

With the liquid preparations these statements have to be somewhat modified. Especially is this true with the infusion, for the simple reason that two of the active principles, digitoxin and digitalin, are very little, if at all, soluble in water, so that the infusion contains only digitalein and digtonin. The one directly antagonizes the action of the other, yet both are, in a measure, toxic to the involuntary muscle fiber. In this respect the infusion becomes of comparatively little value, and less damaging in its effects upon the system than the powder.

With the tincture, still another condition obtains. The digitoxin and digitalin are freely soluble in alcohol, while the digitalein is sparingly so, and the digitonin is insoluble. Thus, we find that each preparation of digitalis differs from the other, and cannot be directly compared with it. The fluid extract more closely resembles the powder, it being made by the action of both alcohol and water; this, however, is, in a measure, a very uncertain preparation, for there is no practical method of determining how much of the soluble elements in the water and in the alcohol may be dissolved or precipitated by the presence of the soluble and insoluble menstruum.

With this knowledge of the chemical composition of digitalis and its contained active principles, and the variation in the composition of its preparations, its therapeutic possibilities can be easily worked out.

While digitalis is often spoken of as a cardiac tonic, there is little or nothing known in relation to its action upon the system that will justify such an assumption. Digitalis can be made to slow the action of the heart, but to do this the cardiac muscle is stimulated to do more work; at the same time the intrinsic muscle fibers are being steadily poisoned and the nutritive supply steadily diminished by the increasing high tension. Hence, the recommendation that digitalis must be interrupted every few days to avoid sudden and fatal syncope. At this point it may be well to consider the so-called and much-talked-of cumulative action of digitalis. Careful study and research show that there is little evidence to prove that there is any storing up of digitalis, or its sudden elimination in large quantities; on the contrary, the weight of evidence establishes the fact that the active principles of this drug are rapidly decomposed within the system. A more logical explanation must be sought, and one that accords more closely with the known physiological laws. The cumulative action of digitalis appears to be more directly exerted upon the heart, the kidneys often acting freely even in the presence of the depressed heart action.

By keeping closely to the well-known actions of digitalis and combining these with the physiological laws that govern the nutritive processes of the body, a perfectly rational solution of these so-called cumulative symptoms is developed Digitalis, as we have already observed, increases primarily the motor force of the heart muscle, thus augmenting the catabolic transformation of the muscular elements. This, in itself, would deteriorate the muscular strength, but digitalis, in addition, is a direct muscle poison, and this is doubly true of the digitonin. While digitalis at first apparently increases the working power of the heart, it increases, at the same time, the resistance offered in front of it, so that the rapidity of action of the heart must be diminished in order to increase its working capacity. Now, physiology teaches that high arterial tension, by increasing the velocity of the blood-current in the arterial and capillary systems, decidedly reduces the time during which the nutritive interchange between the blood and the protoplasmic tissue in the intravascular protoplasmic spaces can be effected: This law applies equally well to the artificially high tension produced by digitalis. We have, therefore, three factors causing the symptoms of digitalis poisoning, *viz.*, (1) the diminished nutritive supply to the cardiac muscle resulting from high arterial tension; (2) the increased work imposed upon the heart, and (3) the action of digitalis *per se* as a decided muscle poison. This seems to the writer to be the first logical explanation offered for the so-called cumulative action of digitalis. There can be but one result of the continued administration of digitalis, degeneration of the muscular fibers constituting the ventricular and auricular walls, particularly the former. The heart action is first slowed to meet the increased demands; then, like every other degenerated heart, the action becomes rapid and feeble and, finally, irregular; or it may stop in diastole on some slight exertion, such as sitting up in bed or rising to pass urine.

If the drug be administered in homeopathic doses, no perceptible deterioration of the heart will be apparent, but when a thoroughly reliable preparation of digitalis is used, and the drug is administered continuously up to the full physiological limit, the heart is invariably damaged, thus explaining the oft-repeated remark that digitalis proves unsatisfactory in permanently alleviating cardiac affections.

In both insufficiency and stenosis of the left auriculo-ventricular orifice, digitalis improves the condition temporarily; in the former instance by more quickly and effectually closing the incompetent orifice. It also intensifies the systolic contraction and more completely empties the contents of the ventricular cavity into the aorta. This having been accomplished, the mechanical action of the heart is improved.

In a similar manner, in mitral stenosis the prolonged diastole, with an intensified contraction of the auricle, enables the latter to fill the ventricle more completely. This, coupled with the more intense systolic contraction, drives a larger volume of blood into the aorta. Thus in both lesions of the mitral orifice the pulmonary congestion is overcome and the dyspnea consequent upon the pulmonary engorgement is removed. If this were the only and the complete action of digitalis it would be an exceedingly valuable remedy. Up to the point of overcoming the decreased arterial tension and the removal of the venous engorgement, the physiological action of the circulation as well as the mechanical action of the heart is greatly improved. Once the normal tension has been reached and passed, the action of the digitalis is detrimental to all the physiological functions of the body, because it increases the work of the cardiac muscle, poisons the muscle fibers and progressively decreases the nutritive supply distributed to the organ.

In aortic lesions, either in incompetency or stenosis, there seems to be no good reason for using digitalis at any stage. Certain it is that in aortic regurgitation the increased systolic stroke cannot freely compensate for the prolonged diastolic period and longer time during which regurgitation can take place. Added to this are the increasing arterial tension, with its greater resistance in front of the heart, and the progressive cutting down of the nutritive supply to the heart muscles, both of which, or either one alone, would be sufficient to contraindicate the use of digitalis in aortic insufficiency. In aortic stenosis the augmented cardiac systole might for a time force a larger volume of blood into the aorta, thus temporarily improving the condition; but the increased work of the cardiac muscle, together with the poisoning effects of the digitalis upon the muscle fibers, and the progressively diminishing nutrition, will soon be followed by a deterioration of the cardiac muscle and an aggravation instead of an amelioration of the symptoms.

In fatty degeneration, or any enfeebled condition of the heart muscles, digitalis is contraindicated.

In hypertrophy of the heart digitalis might theoretically be useful in cutting down the nutritive supply, thus lessening the tendency to further hypertrophy even if the hypertrophic condition could not be completely removed. Even in this instance, digitalis is too dangerous a remedy to use for such purposes. Digitalis is of service only for a few days at a time at the longest. It should only be given to influence the heart and circulation when the arteries are very much relaxed, and the pulmonary or systemic veins overfilled with blood. In such instances as these it will tighten up the vessels and, by augmenting the power of the systole, will force a larger volume of blood into the arterial system. In this manner the surplus of blood can be pumped, as it were, from the venous system into the arterial. This accomplished, the digitalis should at once be stopped and more reliable remedies used to maintain the heart and circulation. To use digitalis outside of these narrow confines, when there are so many other safer and more reliable remedies, is, to say the least, extremely poor therapeutics.

Some argue that by giving a sufficient amount of nitroglycerin in conjunction with the digitalis the damaging effects of the digitalis can be obviated. In a measure this is true, but it does not altogether diminish the increased work forced upon the heart muscle, neither does it antidote the general toxic effects of digitalis upon the involuntary muscles as a class. While this is better therapeutics than the use of the digitalis alone, it is not the best that can be done for the patient, and nothing short of the best should be the aim of the truly scientific and practical therapeutist.

OPERATIVE TREATMENT IN CERTAIN SUPPURATIVE CONDITIONS OF THE KIDNEYS.[1]

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WITHIN the last decade our observations of and experience in the treatment of the suppurative lesions of the kidney have been increased by an enormous mass of clinical and pathological material. Important advances have been made in the diagnosis of kidney lesions by means of a more intelligent examination of the urine, by the use of the cystoscope and of the ureteral catheter, and by a greatly extended knowledge of the causes of kidney suppuration and of the avenues through which micro-organisms gain an entrance into that organ. Various bold and brilliant operative methods have been devised in the treatment of the kidney and the ureter, and results formerly beyond the bounds of the most sanguine imagination have been obtained.

It will, perhaps, be interesting to consider in a hasty way the modifications which our ideas have undergone in regard to operative treatment in certain of the group of lesions indicated in the title of this paper. Ten years ago the attitude of surgeons was conservative toward these conditions. At present some of us at least believe that a rational boldness may be the best conservatism.

For purposes of consideration we may classify the purulent infections of the kidney into several types: (1) An acute pyelonephritis attended by the formation of multiple foci of suppuration in the parenchyma of the kidney; (2) pyonephrosis, in this the term including those forms of suppuration in which the process is an infectious one from the beginning, involving the substance of the organ and representing often a late stage of the first group; (3) solitary or few abscesses in the kidney, sometimes of a necrotic or gangrenous type, following injury, occurring in the course of acute infectious diseases, pyemia, and as a metastatic process due to the presence of purulent foci in distant parts of the body, but not to be placed in the category of distinctly pyemic infections; (4) cases of suppuration occurring as a secondary process in hydronephrosis. The limits of this article do not permit me to include a consideration of those processes in which tuberculosis or renal calculus must be regarded as the primary cause of the disease.

Pyelonephritis.—A few years ago pyelonephritis in its acute form, attended by the formation of miliary abscesses in the kidney and by grave constitutional symptoms, was regarded as a disease almost uniformly fatal and was treated solely by medical means, or at least upon an expectant plan until, in the event of the continued life of the individual, a large boggy swelling in the loin might be incised for the evacuation of pus. More recent experience would indicate that many of these infections are limited to one kidney, and that in such cases early operation leads often to the most brilliant results. Consultation of recent literature and personal communications from surgeons of my acquaintance have enabled me to collect several cases of this character. The following surgeons have had cases of this description: Prof. Henri Hartmann of Paris, Dr. Charles McBurney of New York, Dr. Samuel Alexander, also of New York, and the author of this paper.

Prof. James Israel in his recent work, "Surgical Clinic of the Diseases of the Kidney," Berlin, 1901, relates the histories of several cases of kidneys with acute septic infection and numerous miliary abscesses. These cases of nephrectomy for acute pyelonephritis all resulted in complete recovery; their number could no doubt be multiplied by further search. Such results in the treatment of this very fatal disease in its early stages represent a distinct advance in the surgery of the kidney.

It is possible that nephrotomy might have furnished an equal number of recoveries, but these patients were relieved of the septic focus at once; they escaped death from septicemia, from septic nephritis of the other kidney, from all the dangers immediate and remote which not infrequently follow nephrotomy done at a later stage of the disease, and from the very great risk of a secondary nephrectomy often necessary on account of our inability to accomplish a cure without removing the entire organ.

Pyonephrosis.—Incision and drainage have been and still are by many surgeons regarded as the operation of choice in conditions of suppuration within the kidney accompanied by obstruction, complete or partial, to the escape of the pus into the bladder, and characterized by extensive suppuration of the kidney tissue itself, with or without notable dilatation of the pelvis and calyces of the organ. The basis of this opinion rests upon the following assumptions: (1) The operation of nephrotomy has been attended by a lower mortality; (2) nephrotomy does not sacrifice an organ the retention of which in a functionally active state is important to the individual; (3) the sudden removal of one kidney is believed to throw a double duty upon the other, involving the risk that the single kidney may be unequal to the task; (4) it is assumed that the operation is simpler and can be performed in a shorter time, with less danger from prolonged anesthesia, less loss of blood, less risk of subsequent anuria.

In order to determine whether these assumptions are based upon fact, it will be worth while to enumerate the objects to be attained in operations for the cure of pyonephrosis, the conditions found in these cases, the difficulties to be overcome and the means at our disposal for meeting the indications. A pyonephrotic kidney usually consists of an organ in the substance of which purulent collections of greater or less extent are distributed; the calyces are usually dilated and communicate directly with some or all of the abscess cavities. The pelvis of the kidney, on the other hand, may be greatly dilated or but slightly so. The lumen of the ureter may be completely and permanently obstructed, or the obstruction may be incomplete and of such a character as to be partly or entirely overcome by operative means. The purulent foci in the kidney substance may communicate freely with each other and with the calyces, or may be isolated. The interior of the calyx may communicate with the pelvis of the kidney or it may not. The abscesses may be large or small and may lie in any portion of the organ. The remaining kidney substance, unaffected by suppuration, may be large in amount or there may be none at all. The other kidney is not infrequently the seat of a toxic nephritis dependent upon prolonged septic absorption.

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[1] Read before the Genito-Urinary Section of the New Academy of Medicine, 1901.

The condition of the individual may be more or less profoundly septic. The indications then are: (1) To relieve the individual from his septic condition and to do this in such a manner as will imperil his life in the smallest degree; (2) to reëstablish free communication between the calyces of the kidney and the urinary bladder if that be possible.

Let us consider how well the operation of nephrotomy is calculated to fulfil these indications. It is plain that a simple incision of the organ for the evacuation of pus leaves much to be desired. Under unfavorable conditions such an incision may be all that we dare perform; however, this is not usually the case. Owing to the very complicated character of the cavities to be drained and the unknown extent of the organ affected it is necessary to open widely the kidney. In order to explore the upper pole of the organ, its attachments must be freed so that it may be drawn down from beneath the ribs. This involves an amount of traumatism nearly equal to that necessary in nephrectomy. In order to explore the pelvis of the kidney and ureter, we must search the dilated calyces for an opening into the pelvis of the kidney. The pelvis of the kidney must then be searched with finger and probe for a possibly existent stone and the ureter in turn for a cause of ureteral obstruction. The multiple pus cavities must be reduced to a simple form, as a provision for adequate drainage, and must communicate freely with the external wound and remain easily accessible from without.

In order to accomplish this indication it is usually necessary to cut or break down the septa between the several pus cavities, a procedure often attended by much bleeding in cases in which blood cannot well be spared; moreover, the destruction of these vessels very seriously imperils the nutrition of the remaining kidney substance, already the seat of septic nephritis. This is easily proven when, as often happens, the kidney must be removed at a later period and we examine it to see what portion remains functionally active. We usually find either that the kidney substance remaining is surprisingly small in amount, or that it has disappeared and is represented by a mass of fatty tissue containing but few kidney elements.

Suppose we have fulfilled all these indications as well as may be, the operation will have lasted as long or longer than though the organ had been removed, probably as much or more blood will have been lost and our patient has still to run the risk of chronic sepsis. Much weight has been placed upon the risk of the sudden removal of one kidney, thereby throwing all the work upon the other; but, apart from the fact that the diseased organ is probably excreting but little urine at the time of its removal, observation shows that after nephrotomy for pus several days may elapse before the incised kidney resumes its function and urine appears in the dressings; that is to say, during the time that anuria is most to be feared, the incised kidney may be almost as useless as no kidney. There is, moreover, much ground for the belief that a greatly diminished blood-pressure and a feeble heart are among the most potent factors in the production of anuria, and that this condition may follow great loss of blood and cardiac weakness as well when two kidneys are present as when there is but one.

The well-known effect of saline infusions upon the excretion of the kidneys after surgical operations of whatever character strongly supports this view. Among 86 operations done upon the kidney in Roosevelt Hospital from 1890 to 1898 there were 13 deaths. In 3 of these cases anuria was a fatal symptom. Once it followed nephrectomy in which congenital deformity of the entire urogenital tract prevented ureteral catheterization. When a kidney was removed in an advanced stage of tuberculosis, the autopsy showed the other kidney to be cystic and entirely devoid of secreting substance. The other two deaths followed nephrotomy, once for hydronephrosis on one side in the presence of chronic diffuse nephritis on the other; in the other after an incision of one kidney for pyonephrosis when a similar condition was present on the other side. The cases of pyonephrosis numbered 20; 7 were treated by primary nephrectomy, with no deaths; complete recovery in each case. To this list I may add 4 cases of my own done at a later period, with one death. The fatal case was one in which, owing to a large pyonephrotic kidney, dense adhesions and inflammatory infiltration of the fatty capsule, intracapsular nephrectomy was impossible. The patient was an elderly woman with a long history of chronic sepsis; she died of shock on the day of the operation. The amount of bleeding was not excessive, and I am willing to regard the removal of this kidney as an error in judgment. Among the remaining 17 Roosevelt Hospital cases 3 were treated by secondary nephrectomy, with one death. In two secondary nephrectomy was attempted and found impracticable. In one case the sinus finally healed; in the other it did not. Ten cases were treated by nephrotomy with 3 deaths. Of the 7 who survived several left the hospital with a sinus, and I have been unable to learn the ultimate result in these cases.

Israel gives the mortality among his cases of primary nephrectomy for pyonephrosis as 23 per cent.; the mortality of secondary nephrectomy for the same condition as 50 per cent.; the mortality of nephrotomy for pyonephrosis as 40 per cent. A cure was obtained by means of conservative operations in his cases of pyonephrosis in but 5.2 per cent. A very large proportion of those cases treated by nephrotomy in the Roosevelt Hospital, although they recovered in so far that the urgent symptoms subsided and they were able to leave the hospital, were not at that time definitely cured; that is to say, a pus sinus or at least a tract from which pus and urine at times escaped remained in the loin, and several of these individuals were obliged to wear a drainage tube to avoid the occurrence of septic symptoms which soon appeared when the drainage tube was omitted.

To those who are practically familiar with the surgery of the kidney it is scarcely necessary for me to refer to the very great difficulties and dangers of secondary nephrectomy in cases of pyonephrosis. Not only are extensive adhesions to the peritoneum quite the rule, rendering infection of the cavity of belly possible, but also the isolation of the pedicle is always difficult, frequently impossible, and is accompanied by a serious risk of wounding the vena cava together with uncertainty of securing the renal artery and vein. Shock in these operations is generally marked. It must then be admitted, I think, that in cases of pyonephrosis, a greater experience would indicate that nephrotomy can hardly be regarded as the operation of choice. In the individual case the question must be decided upon consideration of (1) the general condition of the patient, (2) the condition of the affected kidney and ureter and of the surrounding soft structures, and (3) the condition of the other kidney. Great weakness of the heart, intense anemia, and the other unfavorable accompaniments of profound sepsis, acute and chronic, may render a simple incision for the evacuation of pus the only surgical measure we dare employ. The local conditions may be such that nephrectomy may be impracticable from the start. Such conditions may depend upon extensive inflammatory infiltrations of the perirenal structures; but even in these cases subcapsular nephrectomy may sometimes be accomplished.

In regard to the condition of the other kidney, it should be remembered that a septic nephritis of considerable severity may exist in one kidney without constituting an absolute contraindication to the removal of its fellow. A case described by Prof. Israel proves this. A kidney was removed; it was the seat of intense septic inflammation, with numerous abscesses. A severe grade of nephritis existed in the other kidney at the time of the operation. The signs of nephritis, however, entirely disappeared and the patient regained perfect health.

A similar case has recently come under my observation. A woman of middle age was operated upon by nephrotomy for a tuberculous kidney with secondary pus infection. The septic symptoms improved but did not disappear, and a pus sinus remained in the loin. At this time the patient came under the care of Dr. Charles McBurney, at whose request I passed a ureteral catheter into the ureter of the non-infected kidney. Examination of the urine showed nephritis of a fairly severe type. The urine obtained was of low specific gravity and contained a good deal of albumin, together with granular and hyaline casts. The general condition of the patient was not very favorable as she was anemic and feeble. Dr. McBurney removed the right kidney. The specimen showed an advanced stage of tuberculosis with a secondary pus infection. The patient made a satisfactory convalescence and at the present time, less than a year after the operation, she enjoys a degree of health which may fairly be called robust. The signs of nephritis in the urine furnished by the remaining kidney have disappeared, except that from time to time a minute trace of albumin has been detected. There are no casts.

These and similar observations teach us that the condition of the urine does not furnish an absolute measure of the capabilities of a disordered kidney to carry on its function, if we are able by the removal of its fellow to eliminate the cause of its faulty action. Many cases might be quoted in which an apparently severe nephritis caused by chronic suppuration in any part of the body has entirely disappeared after the septic focus has been removed by operation.

Kidney Abscess.—In cases in which a limited portion only is the seat of suppuration, following injury to the organ or occurring by hematogenous infection in the presence of distant pus foci (in cases of furunculosis, for example), in a few cases of pyemic abscesses in the kidney and in those cases of acute pyelonephritis with the production of miliary abscesses limited to a comparatively small portion of the parenchyma, brilliant results have recently been obtained by various operators by excision of the diseased portion of the kidney. Five cases of this kind have been published by Lenander, four of the patients recovering completely, while the fifth died.

The author draws the following conclusions:

1. Acute pyelonephritis with miliary abscesses is more often a unilateral disease than has been supposed.

2. The changes are often not extensive in the diseased organ, so that a great part of the kidney can be saved and its natural function restored.

The local conditions in these several forms of kidney suppuration are far less complicated than is the case in pyonephrosis and the indications may more often be fulfilled by a conservative operation.

Infected Hydronephrosis.—Originally an obstructive condition, non-infectious in character, leading to dilatation of the pelvis and calyces and later to atrophy of the kidney itself, if unrelieved and accompanied by compensatory hypertrophy of the sound kidney, infected hydronephrosis is frequently curable by a conservative operation if done in time. The operative treatment after infection of the interior of the sac has occurred presents to us problems in part more complicated, in part less so, than is the case in original pyonephrosis.

The patient can be relieved of septic absorption by incision and drainage in a safe and satisfactory manner. The pus cavity is usually a single large sac. Since these cases are usually more or less chronic in character, the cystic mass is surrounded by a dense layer of connective tissue through which septic absorption does not readily take place. If the kidney is still capable of functional activity, drainage may so far eliminate the formation of pus that the interior of the sac finally becomes aseptic, and a subsequent operation, not necessarily grave in character, may be done to reëstablish the communication between the pelvis of the kidney and the bladder. Such an operation may consist of the extraction of a stone, the incision or dilatation of a stricture, of a plastic operation upon the dilated pelvis or ureter, as a result of which the opening of the pelvis into the ureter becomes the most dependent point and the urine by gravity seeks its proper channel. In the event of failure a secondary nephrectomy is rather less dangerous than is the case with pyonephrosis. A much larger proportion of these cases are cured by conservative operations, 37.5 per cent. as compared with 5.2 per cent. in pyonephrosis. When nephrectomy is necessary the kidney has, as a rule, long ceased to functionate. No additional work, therefore, is thrown upon the other kidney. Nephrotomy, however, is to be regarded as the operation of choice.

ON THE TECHNIC OF CYSTOSCOPY IN THE FEMALE.

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SINCE Nitze's perfection of the cystoscope gave us a means of obtaining the greatest possible degree of certainty in the diagnosis of pathological vesical conditions, and since Winter, Kolischer, Viertel and others applied it and its modifications to the examination of the female bladder, there has been much difference of opinion among cystoscopists as to the difficulties accompanying its proper application. One hears, on the one hand, that it is ridiculously easy when compared with cystoscopy in the male, while the other side is inclined to magnify its difficulties. Personal experience, covering something over one thousand cystoscopic examinations in both sexes, leads me to agree fully with Casper's view. He says: "With reference to the insertion of the cystoscope, the technic is easier in the female than in the male, since the difficulty of passing it through so long and curved an organ falls away. But inside the female bladder the examination is more difficult." If we had, in all cases, to deal with a bladder of normal contour, this difficulty would fall away; but the pelvic organs of the women who seek the aid of the gynecologist or urologist are seldom normal, and so we find the lumen of the bladder encroached upon and its contour changed by the pressure of a displaced or an enlarged uterus, by abnormal conditions affecting the adnexa or by new growths and pelvic exudates. As these pathological conditions affect chiefly the floor and sides, as well as the lower rear wall of the bladder (those parts which are in the greatest danger of coming into contact with the lamp of the instrument), it will readily be seen that in order to carry out the examination in such a manner that the patient may run the least risk and the examiner be given the maximum of information, a technic must be employed when examining the female which differs somewhat from that employed in the male.

The method which has given me the best results is, in brief, as follows: The patient, having loosened the clothing about the waist, is placed in a semi-recumbent position upon the examining-chair or table, her feet resting upon the foot-rests, the knees flexed and the thighs well separated. The chair or table must be of such a height that the eye-piece of the cystoscope will be on a level with the examiner's eyes. The external genitals are thoroughly cleansed, after which the meatus is specially cleansed; the urethra may also be irrigated with a 1-10,000 solution of bichloride of mercury, although this is not imperative. The urine is then drawn off by means of a metallic catheter, previously sterilized by boiling, and is put aside for examination.

The next step is thoroughly to irrigate the bladder until the fluid returns *perfectly* clear. It is important that care be taken to have it perfectly clear, as the slightest turbidity seriously detracts from clear vision during the process of examination; the cleansing may, at times, severely tax the patience of the examiner, especially if there be a bleeding-point within the bladder-cavity, or a discharge of blood or pus from the ureters. As soon as the fluid returns clear, we proceed to the filling of the bladder. It will be found that the quantity required to distend sufficiently the bladder of the female is greater than that required for the male; whereas, in the latter, 150 c.c. are usually safe, we require between 200 and 300 c.c. to properly distend the bladder of the former. At times, especially if the bladder be the seat of a severe inflammatory process, it will be found that the viscus will tolerate the injection of only a very small quantity of fluid, promptly expelling the entire contents if more be injected. In these, and only these cases, the bladder may be rendered more tolerant by the injection of a 1-per-cent. solution of cocaine, or of 2-per-cent. beta-eucaine. Seldom is general anesthesia necessary. I have, in irrigating and filling the bladder, come to use only a 1-per-cent. solution of boric acid.

When the bladder has been filled, the cystoscope, previously sterilized, is connected with the battery and tested, to ascertain whether the lamp is perfect, and after lubrication with sterilized glycerin or one of the aseptic lubdicating pastes, is inserted into the bladder, the beak being directed upward during this step. At the meatus one often meets with a hindrance to the insertion of the instrument, since the meatus is in many women small and very sensitive. This hindrance may usually be overcome by placing in the urethra for a few moments a small pledget of absorbent cotton moistened with 2-per-cent. cocaine solution, so that the meatus and a centimeter or so of the canal are brought into contact with the anesthetic. Of the obstructions to the introduction of the instrument little need be said, as they do not occur so frequently nor are they so severe as in the male. Strictures of the urethra are not of very frequent occurence and usually, when present, of not very marked degree. When, however, they occur, preliminary dilatation of the urethra must be employed. Fissures of the urethra, as well as mucous polypi or caruncles, may offer a decided obstruction by rendering the urethra exquisitely sensitive. This obstruction may, however, usually be overcome by anesthetizing the urethra or by the removal of the new growth, followed by cauterization of its base. Foreign bodies or calculi in the urethra are not frequent, and when present must be removed, a procedure rendered comparatively easy by the short canal. Pelvic tumors or exudates, as well as marked enlargement, or displacement of the uterus, may render the examination very difficult or even impossible of performance. Still this may be overcome in the majority of cases by sufficiently distending the bladder with fluid; when the viscera are *fixed*, as sometimes occurs in old peritonitic or parametritic exudates which have gone on to the formation of atrophic connective-tissue bands, or when the tumor is of such weight that the pressure of the intravesical fluid is not sufficiently great to lift the mass, the interference may make the examination impossible.

The next step, to my mind probably the most important of the precautionary measures, is the thorough exploration of the cavity of the bladder, using the unlighted cystoscope as a sound. This maneuver, which, I believe, originated with me, has proven of the greatest value, as it acquaints one with the relative position of the uterus—the chief source of encroachment, and with the presence or absence of any other serious obstruction or distortion, and gives one an idea of how great a degree of excursion the cystoscope may safely make during the examination. Too much stress cannot be laid upon this simple procedure, which has made it possible for me to avoid injury in many cases which must, under the older methods, certainly have suffered as a result of marked distortion of the bladder. Especially valuable, therefore, is this procedure in cases in which abdominal or pelvic tumors are present, or their existence is suspected. If we bear in mind the fact that we insert into the bladder an electric lamp which is capable, even though small, of causing severe cauterization of those parts of the bladder-wall with which it remains for even a short time in contact, we can readily explain the occurrence of infection after cystoscopy, of which we so frequently hear complaints. As a result of repeated examinations of cases (both male and female) in which infection had followed cystoscopy, I have come to the conclusion that, when infection occurs after a cystoscopy in which proper aseptic precautions have been observed and in which there has been no extensive wounding of the urethra, the infection is in almost every case due to a cauterization of the vesical wall. I cannot believe in the "urethral fever" of nervous origin, but hold that in each case it is the result of an infection. A measure which has proven of great aid to me in preventing infection in this, as well as in all other urethral or vesical instrumentation, has been the use, whenever possible, of urotropin, in doses of 0.5 gram three times daily, for several days preceding the operation.

After having assured ourselves of the position of the uterus, of the presence or the absence of any tumor-mass, we next proceed to illuminate the bladder and to methodically examine the entire wall, beginning with the anterior portion, then passing to the lateral, and lastly to the base and rear wall. As the trigone is the most frequent seat of changes—for here we find the larger portion of inflammatory processes and tumors, as also calculi and other foreign bodies—we must direct the most careful scrutiny to this part. The finding of the ureters is frequently a matter which presents a great deal of difficulty to those not very familiar with the conditions affecting the location or dislocation of the orifices, and the great degree of variance in the size and appearence thereof. The most reliable rule is first to locate the ligamentum interuretericum by examining the floor of the bladder from the lower sphincteral margin backward. This having been found, the cystoscope is turned to the right or to the left till an angle of thirty or forty degrees from the perpendicular is reached, when the ureteral orifice will usually be found somewhere within the field of vision. Having found one, it should not be difficult to locate the other. Some authors recommend that in locating the second the cystoscope be turned so that the point of the lamp moves upward describing an arc through the greater part of a circle about the long axis of the instrument, thus minimizing the danger of injury to the bladder-wall. That this procedure has some virtues is self-evident. However, the movement of the instrument in the urethra should be no greater than necessary, and experience has led me to prefer to turn the lamp downward through an arc of from sixty to eighty degrees, following up the ligament to the other side and avoiding injury at the same time by slightly depressing the ocular end of the instrument, thus lifting the lamp well away from the lower posterior bladder-wall.

As the bladder-wall has not been anesthetized, even slight cauterization with the lamp will cause a burning pain to the patient, and it has been the writer's rule to instruct the patients to call attention *at once* to any painful sensation. If we be in doubt as to whether the pain is due to a burn or simply to the presence of the cystoscope in the urethra, the extinguishment of the lamp will quickly clear up the doubt. If the pain be urethral this maneuver will not affect it, while slight movement of the unilluminated instrument will call it forth or increase it; if due to a burn, the extinguishment of the lamp is at once followed by an easing of the pain, while, if the lamp be left burning, the pain rapidly increases in intensity. I have seen severe infections, local as well as general, occur as the result of severe cauterization of the anesthetized vesical mucous membrane, even when the examination was performed by masters of the art, and have in consequence been led to avoid anesthesia whenever possible.

When the examination has been completed, the cystoscope is removed, with the beak upward, after the extinguished lamp has had a few moments to cool off; and if no cauterization has occurred, the contents of the bladder are allowed to flow off, with the exception of about 50 c.c. When, however, cauterization has occurred, however slight in degree, it is advisable to remove the entire quantity and to inject about 30 or 50 c.c. of a ⅛-per-cent. solution of nitrate of silver, which is allowed to remain until the next urination. Observance of these rules and precautions has made it possible for me to reduce cauterizations or injuries of the bladder-wall to the minimum, even when, in my course of instruction, the cystoscope was placed in the hands of students; it has also been possible to avoid infection by their proper observance.

It does not come within the scope of this article to discuss the views advanced by some writers concerning the limited applicability of cystoscopy as also the earnest warnings against the dangerous character of the procedure. I can only say that it has given us a means for the attainment of *certainty* in the diagnosis of hitherto obscure vesical and renal conditions; that I believe it to be, when properly employed, less dangerous, even, than the other and older means of diagnosis; that its dangers have been overestimated, when it is in skilful hands. Neither the cystoscope nor any other instrument has any business in the hands of bunglers.

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MEDICAL PROGRESS.

MEDICINE.

Whey in Typhoid Fever.—Diet in typhoid fever, especially during protracted attacks, is a question which often troubles both the patient and the physician. Recently in Great Britain whey has been used as a partial or complete substitute for milk. A. T. BRIDHAM (Lancet, Mch. 15, 1902) gives the following note on the subject. Quoting P. G. Selby he reviews a series of seventy-three cases with a death-rate of 2.7 per cent. This series appeared in the Lancet, November 2, 1901. Since then S. J. Gee of St. Bartholomew's Hospital, London, has treated four cases entirely and one case partially with whey. All did well. One of these cases deserves special notice on account of its severity and the favorable issue under this more or less new departure in treatment. Without reporting the case in detail, the most noticeable points were the following: Although repeated hemorrhages and other marked symptoms were present, there was no distention of the abdomen. Another patient taking one-half pint of milk with whey showed more distention on the third day after admission than did the first throughout his illness. From the size and thickness of the sloughs which accompanied and followed the repeated hemorrhages the author is convinced that had the patient's intestines been distended perforation must have followed. Delirium was also absent throughout the disease except for a short time on one or two occasions. There was no serious diarrhea in spite of the severe ulcerations. The bowels were loose, but never troublesome. It appears that possibly these three symptoms are often much aggravated by toxins due to decomposing milk curds. With regard to the state of the mouth and tongue, no change for the better was found because it was dry and cracked and difficult to keep clean.

Gangrene During Typhoid Fever.—The following case of gangrene of the skin during an attack of typhoid fever is reported by A. S. BARROW (Lancet, Mch. 15, 1902). The woman was married, afflicted with the disease in May, 1901, on its twenty-sixth day she had a severe hemorrhage from the bowels, another twelve hours later, and then she passed into collapse from which it was difficult to arouse her; on the twenty-eighth day a small bulla appeared over the left outer malleolus and a large bulla over the right buttock; both shriveled up within twenty-four hours and left a black patch beneath them, devoid of sensation. The site of the bulla over the malleolus formed a slough which was removed, leaving a punched-out ulcer one inch long and one-half inch wide extending down to the subcutaneous tissue. The bulla over the buttock formed a slough more gradually, but in ten days a large slough was removed, leaving a deep, excavated ulcer with sharply punched-out edges, one and one-fourth inches deep, three inches long and two inches wide. This was slow in healing, but with the patient lying chiefly on her face a good result was obtained. The ulcer over the malleolus healed speedily. There were no bed-sores and the nursing was in the hands of a competent person.

Electrical Shock.—Electricity with its varied relation to medicine, especially as a cause of death, is still more or less an obscure subject. F. B. ASPINALL (Lancet, Mch. 8, 1902), although not a physician but an electrical engineer, contributes a paper interesting in many details. The chief questions and his answers to them which he gives are the following: Although not yet definitely determined, in the absence of positive proof it is probable that not everyone is equally susceptible to an electrical shock. There are a number of diseases, especially such as affect the general nutrition and strength, which make the victim of them more likely to be fatally injured by an electrical shock than if he were in a perfectly good condition. The path which the current takes through the body probably has an important effect. For example, if the vital organs be directly in the transit of the current, the result is more instantly fatal or apt to be. The most important of all questions is that of contact and no doubt it is certain that the rapidity and absolute hopelessness of the fatal shock depend more upon perfect contact than upon anything else. Death is usually accompanied by a peculiar cry, inspiratory in character. From a medical standpoint this is probably due to the tremendous spasm of all the muscles accompanying death and directly dependent no doubt upon a spasm of the diaphragm. The direct currents are probably much more destructive within the same limits than are the alternating, although at one time the opposite was considered the truth. In the present state of knowledge little can be done to help anyone who has received a heavy shock of electricity. The writer thinks from personal observation that one of the very best things is to invert the patient instantly, so as to make the blood gravitate toward the brain. He quotes examples in which recovery has been secured after a two-thousand-volt shock from hand to hand. The patient was inverted and his chest thumped and artificial respiration done. He recovered in forty-five minutes. Another man received the same violent current and fell down a stair-case, remaining for twenty-five minutes without assistance head downward. He also recovered.

Obliterating Endarteritis.—The cause of this common condition is by no means settled. A. P. Gould (Lancet, Mch. 15, 1902) says that it has been attributed to injury, to external cold, to neuritis, to injuries of a weak and depressed vascular system, to the repeated impact of foreign particles against the sides of a small artery setting up irritation or molecular unrest within certain of the endothelial cells, which manifests itself by arousing the little center mass of nuclear protoplasm to activity. As a matter of fact, so little is known of the ultimate causes and processes of disease that it is difficult to accept or reject such theories. Of the known causes syphilis is the most certain; influenza, alcoholism, erythromelalgia, cold, contusions, and profuse thrombosis or phlebitis may be regarded as more or less immediate factors of the disease. Diabetes usually causes gangrene by exciting it. There is little to say on the subject of treatment. The following may be carried out. Rest, local warmth, anodynes for pain, usually in large doses, massage to promote the collateral circulation, absorption through the lymphatics and evacuation of waste products from the cells and their tissues. In the acute stage the tenderness is too great to admit of it. In the early cases it must be cautiously employed. When the disease seems to be arrested and one has to deal with its effects only, it may be used a little more vigorously. Small, mummified areas of gangrene, especially in the extremities, may be left to separate of themselves. Extensive gangrene, especially the mixed form, demands amputation. The relief of the exceedingly great pain usually compels the patient to submit to the operation. The amputation must be done high above the gangrenous area and at a place and by a method which throw the least strain upon the vessels of the part. Thus amputation through the lower part of the thigh had best be preferred to disarticulation at the knee and musculo-cutaneous flaps are to be chosen in preference to pure skin-flaps.

Poisoning from the Application of Carbolic Acid to the Unbroken Skin.—A patient who had previously used a 2-per-cent. carbolic-acid solution for pruritus changed the strength of the solution to 4 per cent. to get a more satisfactory anesthetic effect. After a bath at midnight the solution was freely applied over the abdomen, pubis, thighs and lumbar region. Seven hours later intense pain was felt, apparently in the bladder. There were frequent chills, profuse, cold perspiration, vertigo, vomiting and a desire to evacuate the bowels. The eyes were prominent and fixed. Vertigo increased with an appreciable paralysis of the lower extremities and complete cessation of the functions of the stomach, bowels and kidneys, no urine being excreted for eighteen hours. Four hours after the beginning of the attack the patient became drowsy and was awakened from time to time by recurrent lancinating pains. Enemata of hot water were retained. The urinary secretion gradually returned after a hot bath and compresses. Examination of the urine showed it to be smoky and to contain carbolic acid and abundant albumin. The appearance of the urine, writes J. W. Wainwright (Boston Med. & Surg. Jour., Apl. 3, 1902) led to the discovery that the patient had used a carbolic-acid solution as described. There was great depression for three days, with evidences of highly inflamed kidneys; in ten days the patient was entirely well. The carbolic acid was evidently absorbed more readily because of the ideal conditions following the hot bath.

Serumdiagnosis in Pulmonary Tuberculosis.—The existence of a specific agglutination reaction by means of which tuberculosis can be diagnosticated is flatly denied by F. DeGrazia (Berlin klin. Woch., Mch. 24, 1902). Cultures of tubercle bacilli are agglutinated by blood-serum obtained from persons suffering from pulmonary tuberculosis; the same reaction can be obtained, however, by means of the serum of absolutely normal individuals or of persons having various diseases. Furthermore, writes DeGrazia, the blood-serum of tuberculous individuals will produce agglutination in cultures of staphylococcus pyogenes aureus, of typhoid bacillus, of diphtheria bacillus, of cholera bacillus and of bacterium coli. The intensity of the reaction in tubercle cultures is not constant. If emulsions of dead bacilli be substituted for cultures of living germs, the same reaction is obtained, although it appears somewhat more slowly.

Angina Cruris (Intermittent Claudication) and Allied Conditions.—Among the many names that have been proposed for the condition which is described as angina cruris by G. L. Walton and W. E. Paul (Boston Med. & Surg. Jour., Apl. 3, 1902) the "claudication intermittente" of Charcot and the "intermitterendes Hinken" of Erb are sufficiently simple for general use, but are misleading in that they emphasize an unessential feature of the disorder (lameness), while drawing no attention to the essential symptom, namely, intense paroxysmal pain. The clinical picture of angina cruris consists of more or less frequent brief attacks of paroxysmal pain in the leg, affecting as a rule the same region, oftenest the calf, recurring at irregular intervals, generally when in the erect position, but sometimes when the patient is in bed, often accompanied by local asphyxia and cyanosis, and usually in a limb in which pulsation is wanting in the dorsalis pedis artery or the posterior tibial artery, or both. The attack resembles in its severity that of painful facial tic. The underlying cause is probably restricted circulation, whether resulting from (*a*) degenerative arterial changes incident to advancing years, (*b*) from congenital predisposition to feeble circulation and to arteriosclerosis, or (*c*) from acquired arterial disease, such as obliterating arteritis due to syphilis. Vasomotor spasm is the hypothetical exciting cause of the attack. Higier, Goldflam and Hagelstam collected many cases and concluded that the Semitic race is peculiarly subject to the complaint. Walton and Paul have seen one typical case and fifteen cases representing a modified type of the disease, but none of the individuals affected belonged to the Semitic race.

Leucocytosis in Scarlet Fever.—Of great value to the clinician from the standpoint of diagnosis and prognosis is the question of leucocytosis in scarlatina, which has been carefully investigated by J. M. Bowie (Jour. of Path. and Bact., Mch., 1902) with the following results. Practically all cases of scarlet fever show leucocytosis, which begins in the period of incubation shortly after infection and reaches its maximum at or shortly after the height of severity of the disease, and then gradually sinks to normal. In ordinary simple uncomplicated cases, the maximum leucocytosis is reached in the first week and the normal generally during the first three weeks. The more severe the case, the higher is the leucocytosis and the longer it lasts. A favorable case in any one variety of the disease has a higher leucocytosis than an unfavorable case of the same variety. The fever has no direct effect on the leucocytosis. The polymorphonuclear leucocytes are increased relatively and absolutely at first and then fall to the normal, the lymphocytes acting inversely; this cycle of events occurs in simple cases within three weeks. Eosinophiles diminish at the onset of the fever, increase rapidly in simple cases until the height of the disease is past, then diminish and finally reach the normal some time after the sum total leucocytosis has disappeared—in short, when the poison has been eliminated. The more severe the case, the longer are the eosinophiles subnormal before they rise again; in fatal cases they never rise, but sink rapidly toward zero and remain there. The leucocytes in complications go through a cycle of events similar in all respects to that of the primary fever. From the standpoint of diagnosis the leucocyte count gives no information, for most of the febrile affections with which scarlatina is likely to be confounded have a leucocytosis of their own. Measles which has no leucocytosis is rarely confounded with scarlatina. On the other hand, the differential count is of value, for scarlatina is one of the few acute infectious diseases in which one finds an increase in the eosinophiles early in the disease, which persists for some time. Thus tonsillitis and septic conditions should be readily distinguished from slight cases of scarlatina by a long-continued eosinophilia of the latter, and it is precisely in the differential diagnosis of such cases that the difficulty lies. From the standpoint of prognosis, leucocytosis is of practical value. In simple cases, if severe, and if the leucocytosis be high and rising, one may predict a favorable course; if the leucocytosis be low and stationary one may expect a tedious case. If, after the crisis in the temperature, the leucocytes steadily diminish, the case is doing well. If they stop in their return to the normal, or rise again, one may expect some complication, and, as nephritis is the one mostly to be feared, one may take the proper measures accordingly. In the anginose kind, with a high and rising leucocytosis, one may predict a happy ending. If low and sinking, while the objective symptoms are becoming aggravated, a fatal issue is to be expected. In the differential count, if the eosinophiles show a relative increase, the augury is good; if normal or if it sink after the first day or two, the case in all probability is a severe one. As long as the relative increase of eosinophiles is present, one cannot be sure that some complications will not ensue, whereas if the eosinophiles have come down to the normal in the usual way, one should be free from anxiety.

Abdominal Grippe.—The toxins of Pfeiffer's bacillus seem to exercise an elective congestive action upon the various vascular regions of the body by means of the mediation of the cerebrospinal and sympathetic nervous systems. It results in a definite series of vasodilator activities, in specified regions, such as the lungs, liver, intestines, meninges, etc. Hence, says E. Michel (Gaz. de Gyn., Mch., 1902), it is not illogical to suppose that these congestive processes can by preexisting condition so act that they appear as divers clinical forms. varying according to the organ most affected. But this does not explain the reason why the abdominal form should appear separately as an epidemic. In all probability, the abdominal congestion with an attack of grippe may so stir up the bacillus coli communis that it may act as the cause of the predominance of the gastrointestinal symptoms. Still this bacterium is doubtless not alone responsible in every instance. Influenza may increase the virulence of streptococci and also the staphylococcus. Marchiafava, Massalongo, Weichselbaum and Galliard have described cases of enteritis occurring during or following pneumonia, in which the intestines were covered with glairy pseudomembranes and even fibrous membrane, due to the presence of the coccus of Talamon. It is difficult to distinguish clinical forms of abdominal influenza due to congestion alone, from involvements due to secondary organisms. The author distinguishes the following clinical forms in the disease: (1) The mixed form in which the abdominal symptoms are concomitant with the thoracic involvement; (2) that form in which the abdominal symptoms alone are present. This latter may give distention to a marked degree. Again it may simulate peritonitis and even typhoid fever. Abdominal influenza may coexist with typhoid fever. One will often have to rely upon the serum diagnosis to distinguish this disease from typhoid fever. There is a choleiform type which may be fatal and the pseudoperitoneal form is serious as the involvement is probably secondary to a colon bacillus infection. The pseudotyphoid variety may cause death in feeble patients or alcoholics by producing cardiac failure or by toxemia. Arteritis, phlebitis and enterorrhagia make the prognosis more grave. When there is much diarrhea intestinal asepsis should be employed, with irrigations of large amounts of fluids. Cardiac weakness is to be combated with caffeine and sparteine. In pseudoperitoneal involvement, wrap the extremities in cotton wadding; for mucous discharges small doses of quinine are very beneficial.

Glycosuria in Rabies.—The diagnosis of rabies has always been fraught with the utmost anxiety to both physician and patient. The only means for the diagnosis of this disease in man before its actual invasion has been an experimental one, namely, the inoculation of rabbits with the extract of the spinal cord of the rabid animal. Anything that will strengthen this diagnosis or even render it probable when the means for experimental inoculation are not available is certainly of extreme value in practical medicine. This assistance is apparently furnished by the investigations of Rabieaux and Nicolas (Jour. de Phys. et de Path. Générale, Jan. 15, 1902). These observers examined the urine of many animals at all stages of the disease and even postmortem by means of the phenylhydrazine test and found the presence of sugar in the great majority of cases. They reach the following conclusion as regards the value of this discovery: Considering the inherent difficulty from the clinical standpoint of the diagnosis of rabies after the death of the animal, the frequency of glycosuria in this condition makes it an important element, alone or associated with other manifestations in the probability of the diagnosis. It is all the more valuable inasmuch as the examination for sugar in the urine of the suspected animal, whether dead or alive, is within the reach of every practitioner. In certain cases in which it is impossible to obtain the urine, the investigation is necessarily impossible. In certain cases sugar is not found; this would not warrant the exclusion of the disease. The urine of a woman suffering from hydrophobia was examined and tested with Fehling's solution; the result was negative, but with the phenylhydrazin test the result was positive, demonstrating the necessiy of employing the latter test when the amount of sugar is very small. As to the time of the inception of the glycosuria, divergent results were obtained. In some cases it appeared only in the paralytic stage. In rare instances it was discovered in the very beginning of the disease, corresponding with unusual modifications in the behavior of the animal. In the case of herbiverous animals, the urine of every animal examined showed the presence of sugar and in larger amounts than found in carnivorous animals. In these animals therefore, although glycosuria is occasionally found in other conditions, as vitulary fever (an apoplectic affection in calves), this symptom has a real diagnostic value. The importance of this symptom is deduced not only from the fact that these animals constantly succumb to the disease, but also from the facts that frequently no pathological lesion is observed and no etiological factors can be discovered.

Disturbances of Nutrition in Syphilis.—That the patient afflicted with this disease suffers from a dyscrasia manifesting itself in anemia and malnutrition rarely escapes observation. In what way nutrition suffers is not definitely known. An investigation of this subject was made by Gaucher and Crouzon, (Jour. de Phys. et de Path. Générale, Jan. 15, 1902), who concluded that the disturbances of nutrition caused by the syphilitic infection are analogous to those observed in all other chronic intoxications. In a large number of cases there was found a diminution in the elimination of urea. In 70 per cent. of them the nitrogenous exchange was below the normal. Since the final stages of nitrogenous metabolism occur in the liver cells, the lessening of the nitrogenous exchange in syphilis presents a peculiar interest, inasmuch as it indicates that the general retardation of vital processes that has been observed in this disease is bound up especially with the function of the hepatic cells.

Intestinal Sand.—Sand of the intestine is a curious phenomenon, rather rare, yet sufficiently common to warrant a general familiarity with it. D. Duckworth and A. E. Garrod (Lancet, Mch. 8, 1902) have defined a true and a false variety. The false is composed of remains of vegetable foods resistant to the digestive fluids, perhaps a little incrusted with earthy salts. Pears, which often contain this sand before being eaten, are probably the most abundant source of this kind. True intestinal sand undoubtedly originates within the bowel and is devoid of any vegetable base like the foregoing. Chemically its constituents are approximately organic animal matter 72, inorganic, usually earthy salts, 28 parts in 100. This composition excludes biliary origin by its freedom from cholesterin and the scanty traces of bile pigment. The sand occurs almost always with intestinal disorders, especially mucomembranous colitis. The characters of the organic bases and the large numbers of bacteria included in it point to the intestine as the most likely seat of origin. When the patient of these authors was taking salicylate of bismuth, the sand was gray with a coating of bismuth. The richness of the material in urobilin and its poverty in unaltered bile pigment suggests that it is formed in a region of the bowel where the conversion of the bile pigment into urobilin is far advanced, namely, in the upper regions of the colon. The salts so largely comprising these concretions can hardly be formed in any but alkaline surroundings. The nature of the inorganic constituents is also fully compatible with intestinal origin. Nor is it necessary to look to unabsorbed residues of the lime in food as the sole source of supply, because numerous observers have shown that a large part of the excretion of this element by the body is affected by the intestine, while two, Kobert and Koch, found lime magnesia and phosphoric acid which accumulated in the empty clean colon in a patient with a fecal fistula. The patient of the authors of this paper partook of milk freely, but Bunge has shown that the actual amount of lime in milk is greater than in an equal volume of lime-water, so that this food may perfectly well have been the source of the lime.

Effect of Carbon Dioxide on Digestion.—From a number of experiments performed on himself, F. Penzoldt (Deutsch. Arch. f. klin. Med., Vol. 73) concludes that carbon dioxide has no marked influence upon digestion, yet although it improves it in various directions. The secretion of hydrochloric acid begins sooner and reaches higher degrees, and if it ceases sooner this depends upon the general acceleration of digestion. The good effect of aerated waters in fever are thus to a great extent due to the stimulating influence of the gas, and in anacidity and mild atony they will undoubtedly be beneficial.

Dysentery in Epidemic Form.—Three epidemics of dysentery in a German town have been carefully studied by H. Kriege (Deutsch. Arch. f. klin. Med., Vol. 73). In most cases the patients belonged to the poorer classes and all ages seemed to be equally susceptible, though the mortality was highest among those under the age of ten years. The average duration was forty days. Fever was absent or only moderate and the most frequent complications were bronchitis, bronchopneumonia and pleuritic exudates. In a few cases polyarthritis, peritonitis, pyemia, abscesses, albuminuria and cystitis were observed, but never hepatic abscesses. Certain parts of the city were invaded by the disease in each epidemic and in these the same houses and even the same families suffered repeatedly, though different members were affected each time. The disease showed a general tendency to spread from the original focus. Absolute immunity after one attack did not exist and there is no question that the disease spread by personal contact resulting from ignorance of its infectious nature. This ignorance should be corrected by proper instruction of the public and disinfection should be as carefully carried out as after typhoid.

Diagnosis of Hour-Glass Stomach.—The diagnosis of an hourglass contraction of the stomach, as it is seen most frequently after ulceration, is based upon the following signs: (1) Water poured into the stomach cannot be removed with the stomach-tube. This symptom is also seen with incontinence of the pylorus. (2) Toward the end of the lavage when the return water has already been clear, a sudden clouding will again occur. This is also unreliable, since it may happen when there is a spasm of the musculature limiting the antrum. (3) When air is injected into the stomach, first one half, then the other, will be inflated. In most cases this test is unsuccessful. (4) With the normal peristalsis of the stomach, both halves may become prominent under the abdominal wall. This, however, occurs only rarely. C. A. Ewald (Deutsch. Arch. f. klin. Med., Vol. 73) adds two other and more reliable signs, as follows: The stomach is filled moderately with water and a small electrical light is then passed down. Only the cardiac half of the stomach will be transillumined, even if this part be behind the ribs, while the pyloric half can be made out by percussion. Secondly, a small rubber bag, capable of inflation, is passed into the stomach. In case of stricture, a prominence in the left half of the epigastrium will form when the bag is distended and this prominence cannot be pushed to the right.

Bactericidal Powers of Roentgen Rays.—The effects produced in cultures of micro-organisms by the Roentgen rays have been tested by H. Rieder (Münch. med. Woch., Mch. 11, 1902). The bacteria investigated were the cholera vibrio and the bacillus prodigiosus and coli and the plated cultures were covered with a lead sheet with a central hole and held very near to the tube. A distinct bactericidal effect was noted in all experiments. A number of other factors might, however, play an important part in this action such as the fluorescence, heat, ozone, the electrical changes and alterations in the composition of the media. By covering the plate with paper impervious to light the fluorescing rays were prevented from reaching them and the effects of the heat generated were ruled out by an interposed plate of hard rubber. The ozone present could not have played a prominent part, because control cultures in the same room were not influenced and any possible electrical action was eradicated by another plate between tube and cultures. There were no changes in the media, for these were as fit for culturing before as after exposure. All this proves a specific bactericidal action for the X-rays themselves which shows itself already in from twenty to thirty minutes, but is much less marked in fully-developed colonies. Since the conditions are so very much different in the human bodies and there is great danger of injuring the skin, it follows that little can be expected in the treatment of infectious diseases.

Arteriosclerosis of Cerebral Vessels.—Arteriosclerotic changes of the arteries of the brain are responsible for cerebral hemorrhage, thrombosis and aneurism, but the arteriosclerosis alone is capable of producing a set of symptoms which are not often dwelt upon in the text-books. According to D. Windscheid (Münch. med. Woch., Mch. 4, 1902), the most prominent sign is a certain mental fatigue seen best in those who use their brain most. Authors, poets, etc., will cease to produce new things and they will be spoken of by the laity as "becoming old." Headache is generally troublesome in the form of pressure over the forehead which is present the entire day and aggravated by all physical exertion. There is also complaint of vertigo of a moderate degree and of an annoying loss of memory. Some show a remarkable intolerance toward alcohol. These symptoms are not present in all cases, since often the arteriosclerosis manifests itself only by the sudden appearance of hemorrhage or thrombosis. No doubt there is a very delicate mechanism at work in the brain for regulating blood-pressure, so that compensation may be perfect in these cases up to the onset of the catastrophe.

Gastric Spasm.—In addition to the well-known form of general tetanic contraction of the stomach, two other phenomena of this nature have been observed by I. Boas (Deut. med. Woch., Mch. 6, 1902), namely a tonic contraction of the fundus and a tonic contraction of the pylorus. The latter may be considered as either a sign of organic stenosis or as a symptom of a nervous spasm; its rarity and the difficulty of palpation preclude any extended description. More important, however, is the fundus contraction which the author has found of frequent occurrence and in some cases of marked significance. It can be demonstrated by stroking the fundus of the full stomach with the hand for a short time, until a gradual stiffening can be perceived which disappears after a few seconds with a gurgling sound. This phenomena varies with the individual patient; by some nothing is felt; others are the subject of severe attacks of pain. The author believes that this is the preliminary sign of a gastric tetanus, as the fundus, which does not normally take part in the peristaltic movements of the stomach, here assumes the function of expelling the gastric contents. The continuous failure to overcome a resistance at the pylorus soon converts a tonic into a tetanic spasm. The condition therefore can be considered a danger-signal pointing to an obstruction at the pylorus, either functional or organic. This phenomenon of fundus contraction may also serve as a differential diagnostic point in cases that would otherwise be considered merely gastric atony, and when present in patients with dyspeptic symptoms, prolonged retention of gastric contents, etc., it may be safely taken to mean that cicatrization from old ulcers or some other cause is producing a pyloric stenosis. In this way the question of surgical interference might be largely influenced.

Scarlet Fever.—There is every reason to believe that the bearer of the contagion is the exfoliated epithelium, hence, concludes W. W. Robertson (Pediatrics, Mch. 1, 1902), until the eruption makes its appearance the disease cannot spread. The communication is probably effected by the respiratory tract, or possibly through the alimentary canal. It has been conveyed by milk. There is no characteristic morbid anatomy, the eruption, unless hemorrhagic, fading after death. The eruption makes the patient look like a boiled lobster and disappears on pressure to return promptly when the pressure is removed. At times the eruption is patchy. When severe it itches or burns. The mouth, except the tongue, is bright red; after a few days the tongue desquamates and appears bright red also. The duration of simple, uncomplicated scarlet fever ranges from three to fourteen days. In the variety called "anginose" the throat symptoms are severe and there may be a false membrane; indeed, the throat may present all the features of a severe diphtheria. The ear is almost certainly involved. In the "malignant" variety there is great prostration, cyanosis and delirium. In the "hemorrhagic" form there are more or less extensive hemorrhagic extravasations, epistaxis and hematuria. The treatment is liquid diet, with good nursing, cool sponging or the cold pack if the fever be high, and inunction with cold cream or sweet oil to allay the skin irritation. If the throat require attention it may be sprayed with peroxide (1 to 3), bichloride (1 to 5,000) or carbolic (1 to 50). Cold water or ice externally gives comfort. An efficient throat bandage has pockets opposite the tonsils, and in these, pieces of ice are placed, or India rubber bags may be used. Paracentesis should be practised early if the middle ear be involved.

Ankylostomiasis.—On account of the increasing frequency of this supposedly rare condition J. B. Greene (N. Y. Med. Jour., Mch. 15, 1902) reports the case of a sailor who came to New York after several cruises to the Maine coast, and who gave a history of having been South a few months previously. He complained of pain in the epigastrium, especially on the left side. The bowels were loose and the patient presented the picture of one suffering from severe anemia. The spleen was palpable and the hemoglobin was 44 per cent. The temperature remained about 100° F. The stools contained mucus and blood and upon microscopical examination revealed large numbers of eggs. Thymol and malefern were given and the patient recovered.

Diagnosis of Gonorrheal Arthritis.—In determining whether a case be one of articular rheumatism or one of gonorrheal arthritis, M. E. Fitch (Med. Times, Mch., 1902) offers the following suggestions: Rheumatic fever is almost invariably a multiple-joint affection. The knee is the most frequent site and next in frequency the ankles, elbows and small joints are affected. In gonorrheal arthritis a single joint is usually involved and the condition rapidly becomes chronic. The temperature curve in the latter condition is very irregular and remittent and the patient shows signs of malnutrition, the inflammation showing signs of destructive processes. A history of previous gonorrhea is important.

Compression Cough; Its Importance in Diagnosis of Bronchial Stenosis.—In an article with this title J. Garel (Ann. des mal. de l'Oreille, March, 1902) in which he brings forth evidence that various forms of compression of the bronchi in the mediastinum by tumors, enlarged lymphatic glands, aneurisms and the like are invariably accompanied by that peculiar and characteristic cough which he has designated a "compression cough" and which he regards as pathognomonic of compression of the bronchial tubes. It is a whooping-cough with reverberating, brazing and deep-toned quality and cavernous timber, alarming to those who hear it. It has been called dog-cough, hysterical cough, nervous cough, etc. The author admits a nervous cough, a sort of convulsive respiratory tic cough, but claims it is far different from this sonorous cough. The whooping-cough is a reflex pure and simple from irritation of the vagus or its recurrents; but this cough has in addition the element of compression of the bifurcating bronchi. He lays emphasis on the sonorous and cavernous character as distinctive. It does not make the diagnosis, but it points out where the lesion is and how it acts. The author has had the cough registered on phonograph cylinders because of the comparative rarity of the cases clinically. Its value is enhanced because of the difficulty of getting Weill's sign of flatness.

Posture and Heart Murmurs.—Very little attention has been directed to the influence of posture on heart murmurs. A great many vague allusions have been made to it, but no one has as yet taken the trouble to graphically map this out. W. Gordon (Brit. Med. Jour., Mch. 15, 1902), in an article which is profusely and clearly illustrated, concisely and interestingly presents the subject. He divides the problem as follows: (A) "Hemic" murmurs; (1) in the pulmonary area; these are the murmurs the variation of which with posture have been definitely insisted upon; (2) at the apex; the systolic apical murmur is also greatly influenced by posture, both in loudness and area of audibility; (3) in the aortic area. Here we often find diffusion of murmurs heard in recumbency which can readily be separated when the patient stands; (4) venous hum in the neck, although not a cardiac murmur, it naturally falls under this classification and contrary to the usual statement seems to the author to be best heard lying down. (B) Organic murmurs; (1) mitral regurgitation; the influence of posture is particularly well marked in cases of recent murmurs developing in the course of chorea or acute rheumatism. They tend to be more evident when the patient is lying down; (2) mitral stenosis; here just the reverse appears to obtain. The loudest murmur the author has ever heard was scarcely audible when the patient was recumbent; (3) tricuspid regurgitation; this murmur is variably affected; as a rule, however, it seems to be increased when the patient is lying down; (4) aortic regurgitation; here posture has remarkably little effect; (5) aortic stenosis; this is often considerably increased by recumbency. The problem naturally presents itself, What is the cause of these variations? One important factor is the influence of change in chest depth. After measuring several dozens of chests to ascertain some general mean in the intraposterior diameter, Gordon found that in the normal elastic chest the space which contains the heart becomes on recumbency shallower by about one-sixth of its depth. Such an alteration must bring a listening ear appreciably closer to the murmur-producing orifice. Gravity, as already pointed out by Allbutt, seems to increase the hum when the patient is in the upright position. Can gravity have any effect on the murmurs in the heart? It seems very probable that it does. If gravity really exercise the influence which experiences seem to show, a number of interesting questions arise. For instance, does the patient in the last stage of mitral regurgitation assume a forward position when trying to sleep in order to bring gravity to his help? In conclusion, it seems that recumbency tends to increase all hemic murmurs except the "hum," which it tends to obliterate; to increase the murmurs of mitral regurgitation, tricuspid regurgitation and aortic stenosis; to decrease the murmur of mitral stenosis, and to leave little if at all aortic regurgitation. The effects of gravity and of change in chest depth seem to account for the influence in recumbency. Therefore, in describing murmurs which are modified by posture, the patient's position should always be stated.

Roentgen Rays in the Diagnosis of Intrathoracic Tumors.—The diagnosis of all complicated intrathoracic conditions is well known to be attended by the greatest difficulty. Particularly is this true of primary malignant growths and of the early stages of aortic aneurism. J. Magee Finny and E. J. M. Watson (Brit. Med. Jour., Mch. 15, 1902) present a paper with Roentgen photographs which show very beautifully the three cases they present in detail. The first proved to be that of sarcoma of the right lung and, inasmuch as the symptoms were singularly obscure and difficult of interpretation, they may well bear repetition. The patient was a dressmaker, aged thirty years, whose history was indefinite. For the past three or four months she had lost weight and had not felt well. Six weeks before she experienced slight pain on the right side, had a cough and expectorated a little blood. At this time she noticed that the right breast was larger than the left and the right side of the chest seemed swollen. On physical examination the only objective signs worthy of note were a prominence of all superficial veins on the right side and a moderate increase in the size of the arm. The pulmonary examination revealed the characteristic signs of pleuritic effusion. She was consequently aspirated and 72 ounces of yellow serum drawn off. The latter third of this was blood-stained. It did not coagulate and presented no inflammatory corpuscles or morbid cells. An immediate improvement was noted. The varicosity of the superficial veins diminished and the edema likewise. In a week's time, however, the fluid reformed and at the end of twenty days a second tapping was done, sixty-two ounces being removed. This patient had already been X-rayed with a negative result, but after this tapping another picture was taken which showed very clearly the presence of a tumor in the lower right chest. Again in three weeks the fluid reaccumulated and was removed as before with corresponding relief. It again accumulated and she died suddenly in an attack of dyspnea about two months after the first serious symptoms had been noticed. There are some features in this case which are of particular worth. First, the character of the onset which lasted about six months was very insidious. It was not preceded by any operation for external cancer, nor was there at any time evidence of such growth. Although a necropsy could not be obtained, the symptoms and the photograph together prove without doubt that the disease was primary in the lung and because of the age of the patient was probably sarcomatous in character. Two other cases cited were each of aneurism. While these do not show in the radiograph with the same clearness as the tumor, it nevertheless admits of no possible shadow of doubt. Happily in each of these cases, by virtue of the early diagnosis which the rays enabled the physicians to make, cures were obtained by modified Tufnell treatment. It would seem, therefore, that particularly in aneurisms one may look in the future to very decided improvement therapeutically because of this new and incontestable help in early diagnosis. In both these cases there was a complete absense of all objective phenomena, and the only subjective symptom of any stress was an ill-defined pain in the thorax. It is worthy of note that with the fluoroscope the authors were not only able to detect the tumor, but to note its expansile pulsations.

Finlay's Theory.—In view of the suppression of yellow fever in Havana through the practical application of Carlo Finlay's theory as to the infecting agent, special interest attaches to his original papers (Revista de la Assoc. Medico-Farmaceutica de la Isla de Cuba, Jan., 1902) which were read by the author something more than twenty years ago before the International Sanitary Conference at Washington, and the Real Academia de Ciencias Medicas Fisicas & Naturales de la Habana. The ideas then advanced seem so plausible in the light of recent developments that one wonders how they failed of more general recognition. At the Washington conference he said, in part: "It is my personal opinion that three conditions are necessary in order that the propagation of yellow fever shall take place: (1) The presence of a previous case of yellow fever within certain limits of time. (2) The presence of a person apt to contract the disease. (3) The presence of an agent entirely independent for its existence both of the disease and of the patient, but which is necessary in order that the disease shall be conveyed from the yellow-fever patient to a healthy individual." And again at the Real Academia: "Yellow fever, at times, will travel across the ocean to be propagated in distant ports, while at other times the disease seems unable to transmit itself outside of a very limited zone. Once the need of an agent of transmission is admitted as the only means of accounting for such anomalies, it is evident that all the conditions which have hitherto been recognized as essential for the propogation of the disease must be understood to act through their influence upon the said agent. The fact of yellow fever being characterized both clinically and histologically by lesions of the blood-vessels and by alterations in the physical and chemical conditions of the blood suggests that the agent which conveys the infectious particles from the patient to the healthy should be looked for among those insects which drive their sting into blood-vessels in order to suck human blood. Finally, by reason of other considerations which need not be stated here, I came to think that the mosquito might be the transmitter of yellow fever."

PHYSIOLOGY.

Electrical Changes and Working Capacity of Muscles.—That there is an intimate relationship between the contraction of a muscle and the electrical changes that accompany this contraction, has been assumed for a long time, but the quantitative aspects of this relationship have never been experimentally demonstrated. The results of a research undertaken by Bernstein and Tschermak on "The Relation of the Negative Variation of the Muscle-current to the Working-capacity of the Muscle" (Pflüger's Archiv, Feb. 26, 1902,) are as follows: When a muscle is caused to contract, from the point of stimulation an electric current passes to all parts of the muscle, the point of stimulation being negative to the rest of the muscle. This is what is known as the negative variation of the contracting muscle. When a weight is attached to one end of a muscle, the latter in contracting is caused to do work. In such a muscle, if the muscle-curve be studied, there will be found accompanying the ascending phase of the tracing an increase in the negative variation; in the descending phase there is a tendency to a diminution in the negative variation. In other words, the local as well as the general tension of a muscle by means of a weight places the muscle in a condition in which, up to a certain limit and in response to a maximal stimulus, it reacts with a negative variation greater in intensity and extent, and with a greater energy of contraction; but the latter increases with the degree of weight relatively quicker and reaches a maximum later than the negative variation. The authors believe they have proved a relation between the degree of weight carried by a muscle and the extent of the electrical process aroused in it; as well as between the working-capacity and the declining phase of the negative variation. From this they draw the conclusion that the negative variation lying at the basis of the chemical processes represents a portion of that metabolic change which grows *pari passu* with the weight, and which is expressed totally in the measured heat.

Levulose in the Systemic Fluids.—Lack of a reliable method has heretofore prevented the definite demonstration of levulose in the blood and body-fluids. Conclusive evidence has however been afforded by a recently devised test elaborated by Neuberg, which depends on the facility with which methylphenylhydrazin combines with the keto-sugars, but not with the aldehyde-sugars, to form a definite crystalline compound with characteristic physical and optical properties. H. Strauss (Fortschr. der Med., Mch. 15, 1902) has employed this method in the examination of a series of eight transudates and exudates, and found a positive reaction in five cases. In three of the latter 100 grams of levulose had been given by mouth from one to two hours before securing the specimen. The other two specimens were pleural exudates taken from a patient with multiple lymphomata. The author believes that such observations afford definite proof of the existence of levulose in the tissue fluids.

Occurrence of Arsenic in the Human Body.—To determine whether arsenic really forms an integral part of certain organs of the body, notably the thyroid and thymus, as has been stated, K. Cerny (Zeitsch. f. physiolog. Chem., Vol. 34, No. 3 and 4), after a very careful purification of all chemicals used, performed Marsh's test on a number of glands taken from patients who positively did not get any arsenic as medication. The experiments were all conducted in the same way up to the complete solution of the zinc which usually took three hours. In almost all thyroids traces, never amounting to more than 1/100 milligram, of arsenic were found. The same results were obtained with livers, but more rarely positive with thymus glands. It may therefore be concluded, that though arsenic generally is present in the organs in question, its amount is so small that it cannot play an important rôle in animal economy.

Tryptic Ferment and Zymogen.—An example of the extreme complexity of physiological processes is to be found in the conversion of the tryptic zymogen of the pancreas into the active proteolytic ferment known as trypsin. This conversion is not a simple physical phenomenon, but is a chemical manifestation, resulting from the intervention of a third body which is known to be secreted by the spleen and the mucous membrane of the small intestine. Considerable light is thrown upon this subject by an investigation of the manner and rate of the formation of trypsin and its zymogen in the pancreas. According to H. F. Bellamy (Jour. of Phys., Dec. 23, 1901) the pancreas of a dog presents two phases of activity: (*a*) A slow continuous phase feebly evident after the decline of digestion and reaching its maximum during complete fast. During this period zymogen is accumulating in the gland cells, and at the same time the contents of the latter, although consisting for the most part of pure zymogen, may if the previous intake of food be not copious enough to occasion its entire removal, include a certain amount of true trypsin; (*b*) a rapid and intermittent phase coinciding with the period of considerable gastric activity, in which, as advocated by Herzen, the inactive zymogen granules present in the cells receive from the spleen in the form of an internal secretion the agent with which to elaborate the active proteolytic ferment, trypsin, which passes forthwith into the gland ducts. The blood supplies the vehicle by which this product of the spleen is transported to the pancreas. It appears to be carried by the solid elements of the blood, since serum does not contain it; if carried by the plasma it is destroyed by coagulation. The pancreas of a dog deprived of its spleen exists in the condition of complete and permanent atrypsia; the elaboration of zymogen continues in the gland cells, this zymogen is excreted as such and if it becomes subsequently changed as to be of service to the organism, this process is carried on outside the pancreas, and occurs as the result of some agency other than the spleen. The mucous membrane of the small intestine, as shown by Pawlow, furnishes a product possessing the property of converting pancreatic zymogen into trypsin. This product is especially plentiful in the jejunum, and is elaborated quite independently of the spleen, the presence being manifest throughout the whole digestive cycle, as well in spleenless as in normal animals.

Local Excitation of Pancreatic Secretion.—It has for a long time been supposed that the presence of the acid chyme in the duodenum acts on the nerve terminals of the mucous membrane and excites a flow of pancreatic juice. It has been supposed that this secretion is the result of a local reflex, the centers being situated in the scattered ganglia of the pancreas or in the case of the jejunum, in the ganglia of the solar plexus. According to W. W. BAYLISS and E. H. STARLING (Proc. of the Royal Society, Mch. 7, 1902) the pancreatic secretion is not excited by a local reflex, for it also occurs after extirpation of the solar plexus, after destruction of the nervous filaments passing to the isolated loop of jejunum and also after intravenous injection of .01 gram of atropine sulphate. It must therefore be attributed to direct excitation of the gland or gland cells by a substance or substances carried to the gland from the bowel by the blood-stream. This substance, which is not acid, is produced in the intestinal mucous membrane under the influence of an acid, and when injected into the blood causes a copious secretion of pancreatic juice. This body, which is tentatively called by the authors "secretin," is associated with another body which has a pronounced lowering effect on the blood-pressure. The action of the acid is to split off the "secretin" from a precursor known as "prosecretin," which is present in relatively large amounts in the duodenal mucous membrane, gradually diminishing as one descends the intestine. "Secretin" is probably a body of very definite composition and of small molecular weight. This research shows a chemical sympathy between the pancreas and the intestinal mucous membrane, which sympathy has hitherto been assumed to exist between other organs, as the uterus and mammary glands, but has never been proved.

THERAPEUTICS.

A Substitute for Iodoform.—It has been asserted that the specific action of iodoform on tuberculous tissue was not peculiar to that drug, but that like properties were possessed by other substances, among them bone-charcoal. A. FROMMER (Deut. med. Woch., Mch. 20, 1902) has employed the latter in a series of cases including bone and joint tuberculosis and suppurating lymph-nodes. A 10-per-cent. sterilized glycerin emulsion was injected. The results obtained afforded no encouragement. The injection in pure bone and joint cases was always followed by a painful swelling, with rise of temperature, which lasted several weeks and sometimes resulted in acute abscess formation. The only evidence of value was found in the after-treatment of atypical resected joints and of excised lymph-nodes, but even here the granulations formed were pale and flabby. Another objection is the subsequent pigmentation of the skin. The author concludes that there is nothing to warrant the substitution of bone charcoal for iodoform. The toxic effects of the latter he claims are due to use of an emulsion which has been sterilized or else exposed to the action of sunlight. In 1,000 parenchymatous injections only a slight infection of the needle track had been noted in a few cases. The presence of free iodine in the urine for two or three weeks, the author cites as proof that the iodoform is broken up and distributed through the system, thus having a general as well as a local effect. This fact can also be taken as grounds against the substitution of iodoform by a chemically indifferent substance, such as charcoal.

Mercurial Stomatitis and Proctitis.—It is a curious paradox that certain of the most serious difficulties which beset the syphilographers of to-day spring from the remedies employed, and not from the disease. Iodism and hydrargyrism of the system must be induced, and, at the same time, all the associated evils of these two conditions are to be avoided or subdued. The etiology and prophylaxis of mercurialization in one of its worst phases, the stomatitis and proctitis, are very ably discussed by BOCKHART (Monatsh. f. prak. Dermat., Feb. 1, 1902). An experience gained in the treatment of more than 2,000 syphilitics has taught him that there is only one method on which one can rely to forestall this very serious complication, namely, by the use of potassium chlorate. The drug, however, loses its value unless employed in a very definite manner. In the form of a solution, as a mouth-wash, it is almost of no use; as a curative measure in cases of advanced stomatitis, it can also accomplish but little. The drug should invariably be used in substance, either as a tooth-powder, or as a paste, in the strength of 50 per cent. The patient should be instructed to use it two or three times daily, commencing from one to two weeks before the administration of mercury is begun. A soft toothbrush is recommended, and the drug is to be carefully carried into all the crevices of the mouth, but especially into the gaps which so often exist between the teeth and the margins of the gum. The author found that by this simple prophylactic procedure he was able completely to eliminate mercurial stomatitis from the list of complications, except in very rare cases of idiosyncrasy. An apparently inexplicable accompaniment of this method of treatment is the secondary effect upon the rectum; proctitis practically disappears with the stomatitis.

An experimental, or bacteriological, confirmation of these clinical data has been secured, by plating the washings from toothbrushes. The potassium chlorate brushes yielded by far the smallest number of colonies, and the least resistant. Bockhardt believes that it acts both as an oxidizing agent in the mouth, and as a stimulant for the buccal secretions, which he believes to possess germicidal properties of no mean importance.

Suprarenal Extract in Pneumonia.—It is now generally admitted that the internal administration of suprarenal extract increases the blood-pressure, some believing that its effect depends upon constriction of the peripheral blood-vessels, while others contend that it directly stimulates the heart. E. A. GRAY (Med. Rec., Apr. 5, 1902), having observed the rapid work of this drug in stopping pulmonary hemorrhage, was led to use it in cases of senile pneumonia. He obtained such favorable results that he has been led to believe that the drug is a valuable heart stimulant which may be advantageously employed in pneumonia where there is impending heart failure and impeded pulmonary circulation with coëxisting renal inflammation. Increased peripheral blood-pressure does not seem permanent.

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No. 111 FIFTH AVENUE, NEW YORK.

Subscription Price, including postage in U. S. and Canada

PER ANNUM IN ADVANCE	$4.00
SINGLE COPIES	.10
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LEA BROTHERS & CO.,
No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK.

SATURDAY, MAY 3, 1902.

THE STUDY OF CANCER.

THE interests of science and humanity demand additional light on the subject of cancer. The magnitude of the concerted effort that is being made by civilized society to produce this light can be fully appreciated only by one who attempts to follow conscientiously contemporaneous writings pertaining to the etiology, pathology and treatment of this dread disease. The need is urgent, and it is characteristic of the era that individual research should be supplemented and to a certain extent replaced by more efficient collective effort.

In Russia a collective investigation of the cause of cancer is being carried on by the statistical method under governmental auspices. In the present state of our knowledge work of this character is obviously more or less blind, though commendable. The avowed purpose of the Russian investigation is to compile a map showing that the disease is confined to certain districts and, if possible, to demonstrate the principles of its distribution. Without going so far from home for evidence of the public interest in cancer we may point to the work that has been done by New York State; while these researches have differed in method and scope from those undertaken by the Russian government, the motive which prompted them was the same one of public necessity. In Buffalo the general cancer rate increased between the years 1880 and 1899 from 32 to 53 per 100,000, and these figures are not exceptional. It is true that they may be accounted for in part by improvement in diagnostic skill, yet even to-day the actual number of deaths from cancer is probably everywhere underestimated.

The second annual report of the Cancer Committee of the Harvard Medical School, in regard to the etiology of cancer, is published in full in the April number of the *Journal of Medical Research*. This report has already been alluded to in these columns, but its importance warrants an exact statement of the scope of the work and the conclusions reached. The objects of the investigation, which was conducted by a group of Harvard pathologists and bacteriologists, were to study the following claims of the adherents of the theory of the parasitic origin of cancer: (1) That a proliferation of epithelial cells analogous to the lesions seen in cancerous tumors can be produced by certain well-known protozoa (nodules caused by coccidium oviforme); (2) certain skin lesions characterized by epithelial-cell proliferation are due to the action of a so-called protozoon (molluscum contagiosum); (3) blastomycetes are constantly present in human cancers and are the cause of the lesion; (4) by experimental inoculations of animals with "blastomycetes" true epithelial or cancerous nodules can be produced; (5) the endocellular bodies seen in the protoplasm of cancer cells have a definite morphology, are "parasites," and the cause of cancer.

The conclusions reached after a year of research are that (1) the lesion produced by the coccidium oviforme is essentially a process of chronic inflammation and is not analogous to the lesion seen in cancer; (2) the lesion in molluscum contagiosum is characterized by certain changes in the epidermis, is not due to the action of a protozoon and is not analogous to cancer; (3) the so-called "blastomycetes" ("saccharomycetes") of Sanfelice and Plimmer are torulæ; (4) the lesions produced by these "blastomycetes" (torulæ) are essentially nodules of peculiar granulation tissue, are not cancerous, nor in any sense true "tumors"; (5) blastomycetes are not constantly present in human cancers; (6) the peculiar bodies seen in the protoplasm of cancer cells are not parasites, nor the cause of the lesions, but probably are in part at least atypical stages of the process of secretion by glandular epithelium.

These conclusions will not be universally accepted as finally disposing of the parasitic theory, but they will without doubt do much to discourage such efforts as have been recently begun or were about to begin to provide stronger foundation for that theory. If enlightenment concerning the etiology of cancer is to come ultimately from the side of physiological and pathological chemistry rather than from that of bacteriology, this purely negative report of the Harvard Commission will come to be regarded sooner or later as a valuable contribution to scientific medicine.

PURE FOOD AND POLITICS.

Read between the lines, the Hepburn "Pure Food" Bill, now pending in the House of Representatives, is a misnomer. Its title as it now stands should be "a bill entitled an act to enlarge and increase the powers of the Chief Chemist of the Agricultural Department and to give him supervision over the manufactured food and drug products consumed in this country and exported to foreign lands, and to empower him to pass judgment on medical and hygienic questions in so far as they may relate to the food and drugs consumed by the people of the United States."

In this bill the President of the United States is permitted to appoint a certain number of Army and Navy officers, with whom the chief of the chemical division may or may not see fit to consult on technical sanitary problems; the Chief Chemist is empowered under this bill to appoint more consultants than is the President of the United States, and his power over the commission is thus assured. Moreover, the bill arrogates to the Chief Chemist, whoever he may be, the fixation of standards of purity for the manufacture of drugs and foods of this country, and those interested in the manufacture of many billions worth of such products must step to the "chemist's office" and get the stamp of his official seal or shut up shop. Truly the chemist of to-day is about to realize the dream of the alchemist of old.

Not that we do not need standardized drug products nor pure foods. Such a proposition we do not for a moment question. But it is maintained that while within the provisions of this bill there are many most desirable features, there are certain absurdities, any one of which should preclude even its serious consideration.

If interstate commerce in manufactured foods and drugs is to be at all regulated, and it is in serious need of most careful and wise regulation, such control should come within the jurisdiction of the Treasury Department of the United States Government, and, should questions of deleterious adulteration in food or drug products arise, such should be referred for investigation to the existing medical authorities of the Treasury Department, the present Marine-Hospital Service. The Agricultural Department should have no voice in matters of commerce or of medicine, preventive or otherwise. The Agricultural Department was not instituted for that purpose—its sphere of usefulness should not extend outside of the interests of the grower of crops. The Chief Chemist is chosen for his proficiency in agricultural chemistry; he is not a sanitary expert, nor a physiologist, nor a pathologist, nor a physician, nor is he called upon to possess a knowledge of the complicated details of interstate commerce. Why then should any representative now in office seek to wrest these duties from a department already organized to which they might be referred with much better chance of their competent fulfilment?

The present pure-food legislation emanating from the chemical side of the Agricultural Department of our Government is but a larger and louder "cry to arms" under the auspices of a "pure-food congress" which is strongly suggestive of a lobby at Washington keeping alive the agitation to enlarge the chemical division of the Bureau of Agriculture.

From the medical point of view this agitation has become a stench in the nostrils, since regulation of the manufacture and sale of pure foods and drugs can be better subserved by the proper branch of our Government service—the Marine Hospital Corps — which is infinitely better equipped for such service; especially should the proposed measure for the enlargement of the scope of this important service become a law.

The protection of the public health and the control of sound economics are the fundamental questions which underlie the necessity for a "pure-food law" and to the medical mind it is an amazing spectacle that committees in Congress should permit themselves to be misled in this important matter. To us the problems involved are sanitary, not chemical. A National Health Department—be it a reorganized Marine-Hospital Service or an entirely new organization—we should have, and the solution of these problems is assured.

THE JUDGE AS A MEDICAL EXPERT.

GREAT obsequiousness is paid by physicians to the opinions of judges on medical topics. Both the judges and their sycophants ignore the fact that the judicial function is not to make law, but to interpret it. Under the English common law, scientific matters must be proven by the ordinary laws of evidence; not laid down as dicta by judges generally destitute of scientific training and who go beyond their province in settling matters by an infallible dictum. The besetting sin of judges, as has been well remarked by great constitutional lawyers like Macaulay, is the tendency to make law in place of stating what the law is.

Judges and lawyers too often have the same proclivity for mysticism as clergymen have and with less excuse. The judicial mind is supposed to obey the laws of evidence. Judging from the endorsement given fetichism like Christian Science, Dowieism, patent medicines and advertising quacks by judges, the judicial mind is rare upon the bench. Nowhere is this absence of judicial qualities more evident in judges than in their dealings with medical practice acts, with the payment of experts, and with expert testimony itself.

That physicians should be ignorant of the rules of evidence and should fail to see that the great difficulty in expert testimony is that hearsay evidence cannot be admitted, and that most of the data obtained from a patient are (as has been decided in a rather contradictory Supreme Court decision) subjective and hence of the nature of hearsay evidence, is not surprising. Criticism therefore of expert testimony for the deficiencies which the law creates in it is hence wildly absurd. The law creates for the purpose of avoiding this difficulty a hypothetical case. The ideal method is where one hypothetical case is prepared for one side and the other by the opposing party and both hypotheses are submitted to the expert. Here two contradictory opinions could be rendered by an expert with perfect honesty, since he is not responsible for the validity of the allegations on which the questions are based. This is the true method of presenting expert testimony in scientific fashion. The expert, however, is criticized most for his candor. The allegation of venality is too often mendaciously made. The experts for the defense in the Guiteau case were criticized for venality yet not one received a dollar for expert services, but all testified practically under attachment. The experts first called for the State in the Prendergast matter unanimously found the accused insane and therefore did not receive a dollar for their services. In the case of The People vs. Luetgert, the Cook County Board appropriated money to pay the experts in proportion to the services rendered by them to the State. Venality here would lie against the State, not against the defense. This is the rule in criminal cases. The expert, like the lawyer, frequently renders gratuitous service in the case of friendless defendants. On the other hand, the expert fund of the State is generally looted for callow graduates with a pull.

The judge, therefore, who flings broadcast accusations against medical witnesses ignores facts well known to the better class of jurists. Another great error in the judicial bearing of judges toward medical questions arises from the prehistoric medical lore from which so many judges start as a fixed standpoint. Mere party nomination to a judgeship does not constitute the nominee infallible on scientific topics. This, however, is ignored by many judges who believe that personal experience entitles them to speak with absolute authority on all science. This was well illustrated by Dr. William Darling in a discussion before the New York Society of Medical Jurisprudence some two decades ago (*American Journal of Neurology and Psychiatry*, p. 291, Vol. II). A servant girl charged the son of the family in which she was employed with getting her with child. Dr. Darling confined the woman. The question was whether the child was at full term or not, since, unless at full term, the young man was not responsible. When Dr. Darling was called and the question of gestation arose the judge said: "Did you ever see a seven-months child?" "No," replied Dr. Darling. "Well I have," said the judge. "How you know it was a seven-months child?" asked Darling. "Why, the mother told me so," replied the judge. Darling turned to him and said, "Why didn't you ask the mother in this case and save me the trouble of coming here?" Here the physician was guided by common law presumptions of innocence and requirements of evidence which the judge in his omniscient infallibility ignored completely. The truth is that medical infallibilities of the type which has learnt nothing and forgotten a great deal and the judicial infallibilities join in decrying expert evidence from the standpoint of evolutions from their inner consciousness and not from the standpoints of science and law.

The official expert has proved such a gigantic failure in France and Germany (as witness the Dreyfus and other cases) that scientists like Virchow are urging a system closely resembling that of the English common law. The sooner physicians recognize that the judge is much more liable to err than their medical brethren and that medical expert disagreement "is a harmonic symphony compared to judicial disagreement," the sooner will the evils of the expert system be removed and the sooner will physicians secure proper pecuniary remuneration for expert services.

THE MEETING OF THE AMERICAN PHYSICIANS.

Last Tuesday and Wednesday the Association of American Physicians held their seventeenth annual meeting at Washington. The attendance was unusually large, the papers read covered a wide field of inquiry and the discussions were singularly illuminating.

We have come to recognize that this body of physicians reflects more than any other the advance workers in the field of medical research, viewed in its larger scope, and each annual meeting is looked forward to as serving to bring out the forward steps made during the year and to suggest the trend of future inquiry. Seen from this standpoint the results at the present gathering were not as illuminating as might have been wished but there was an unusually large number of papers which served to make more certain some of the involved questions of prognosis and treatment.

Perhaps the most suggestive of the more theoretical studies, and the one which opens a large vista of possible results in future investigation, was the paper by Dr. Herter on experimental glycosuria which has been alluded to in our editorial columns of April 19th. Dr. Flexner's paper on cytotoxin studies, while following lines already being utilized in foreign laboratories, was also worthy of careful consideration. The possible explanation of the causations of chronic inflammations that Dr. Flexner offered is along a most highly suggestive and stimulating line of investigation.

In the field of practical medicine the discussions by Drs. Cabot and Shattuck call for special comment. Each emphasizes the idea which more and more is becoming recognized as a truth, that tuberculosis is a disease which, not rarely but very often, is recovered from. Dr. Cabot's paper on pleurisy serves to correct an old impression which has guided prognosis for many years.

From the standpoint of the separation of disease types the discussion promulgated by Dr. Osler was highly important. It emphasized the necessity for concerted inquiry in some of the borderland cases of multiple pathogeny and etiology. Dr. Kinnicutt again presented a clear-cut description of an interesting and important condition not readily recognized. The studies on smallpox and vaccines by Drs. Ewing, Councilman and Park were important, and, although as yet incomplete, offer much hope for the understanding of this important subject.

Other papers of high order were presented but for an appreciation of their many good qualities we refer our readers to the full account of the proceedings which is to be found in this week's issue of the Medical News.

ECHOES AND NEWS.

NEW YORK.

Health Department Advisers.—The appointments of the following honorary and advisory officials of the Department of Health were recently announced: George F. Shrady, M.D., consulting surgeon; Daniel Draper, Ph.D., consulting meteorologist; George Henry Fox, M.D., consulting dermatologist; Clarence C. Rice, M.D., consulting laryngologist; Arthur B. Duel, attending otologist, and Stevenson Towle, consulting sanitary engineer. None of the positions carries compensation with it. Under the last city administration, there were nineteen of these honorary and advisory positions in the Department, but not as many are now needed since Commissioner Lederle appointed a Medical Advisory Board earlier in the year. The latter board has proved a great success, according to Dr. Lederle and the Department officials, its meetings often being attended by all of its eleven members.

Magazines Asked for North Brothers Island.—Health Commissioner Lederle requests contributions of magazines for use at North Brothers Island. Any magazine, no matter of what date will be acceptable. They may be sent to Dr. Lederle at the department's building, Fifty-fifth Street and Sixth Avenue.

Results of Phthisis Treatment.—The Commissioner of Public Charities has given out a statement of the results thus far attained at the phthisis hospital, which was opened on Blackwell's Island on February 1st. The whole number of patients admitted to the hospital up to April 15th has been 273. With few exceptions, all the patients admitted were in more or less advanced stages of pulmonary tuberculosis. Rather more than 50 per cent. were in the last stage of the disease, with every indication of death not far distant. The other 50 per cent. consisted of two classes: First, those in whom all the typical symptoms of tuberculosis were present, but who yet retained a fair amount of strength; second, those whose general condition was less favorable, yet who retained sufficient strength to be up for the greater part, if not all, of the day. Of the 273 patients admitted, 55 have been discharged, 50 improved, and 5 not improved. The 50 patients who had improved have, as a rule, either returned to their work or have gone to the country or the mountains at the suggestion of physicians. Twenty-eight cases have been transferred to other wards on account of surgical needs, or as showing no evidence of phthisis; and 76 patients who, when admitted, were in an advanced stage of the disease, have died. There remain in the hospital 114 patients. Of the patients remaining 20 are new cases not yet classified, 40 are unable to leave their beds, and 54 are less advanced cases. Of these, 25 have shown decided improvement, and show an average gain in weight of 6.75 pounds; 13 show less improvement, but an average gain in weight of 1.9 pounds; 16 have not improved, and show an average loss in weight of 1.31 pounds.

Sheriff Seizes a Hospital.—St. Mark's Hospital, 177 Second Avenue, recently passed temporarily into the hands of the Sheriff because of a judgment of $2,500 obtained against it by the J. Elwood Lee Co., of Conshohocken, Pa., manufacturers of surgical supplies. The difficulty which it has just surmounted will, in fact, be likely to prove a benefit, for it has served to arouse the sympathy of a great number of friends. "Our trouble came upon us through no fault of ours," said one of the physicians in charge. "We were simply made the victims of a mercantile concern in Philadelphia which chose, for some unaccountable reason, to treat us outrageously. Some time ago, we bought of this concern $3,000 worth of dressing material, and as we needed what money we had, to make necessary additions in our laboratory, we arranged to pay for this material $500 the first year, and the balance by 1903, providing we bought all the dressing material we needed in the meantime from them, paying cash for it. We fulfilled our part of the agreement, but a little while after the first $500 was paid, this concern brought suit against us, secured a judgment, and proceeded at once to press it. We raised $1,000 and gave it to them. In spite of this they sent a sheriff to take possession. They thought, no doubt, that this would frighten us, and that we physicians who give our time and services to this charity and always contribute what money we can spare, would, perhaps, pawn our possessions to keep the sheriff out. But we were not afraid. We opened the door and invited him in, but he was himself ashamed of his errand. He remained only a few hours last Saturday, after which he quietly slipped out and has not been seen since. Our friends rallied around us, and we have nothing more to fear." The twelfth annual report of the hospital has just been issued, and, by its facts and figures, the necessity of St. Mark's Hospital in this particular district is demonstrated. Since its incorporation on March 7, 1890, 95,239 free hospital days of treatment were given to poor patients absolutely free of charge, 22,566 hospital days of treatment were given to persons who could only afford to pay less than one dollar per day for board, and 15,643 out-door patients made 40,568 visits at the hospital and received treatment, medicine, bandages, etc., without any charge whatever. In the past year 6,735 free hospital days of treatment were devoted to free patients without compensation, 196 hospital days of treatment were devoted to patients who could only afford to pay less than $1 per day for board, 1,468 out-door patients made 8,897 visits to the hospital, and received treatment, medicines, bandages, etc., free of charge, and 1,282 meals were given to poor persons applying for them. In all 2,681 patients were treated in the course of the year.

Little Fire at St. Vincent's.—St. Vincent's Hospital had a fire scare this week. There was just enough of it to try the nerve of the sisters, but not enough to cause any panic among the patients. The trouble originated in a leaking gas meter in the basement workshop on the Eleventh Street side. When the hospital carpenter entered the place about seven o'clock in the morning and lighted a match, an explosion followed. He was hit on the head by a piece of the meter, and a pile of shavings on the floor was ignited. Policeman Irving, who was in the hospital watching a prisoner, heard the explosion and aroused the sisters before he ran out and sent in a fire alarm. The sisters quickly closed the doors to all the wards in order not to alarm the patients. The fire was put out before the firemen arrived.

Hastening Bronx Hospital.—The bill authorizing a bond issue of $500,000 for a public hospital in the Bronx having received the Governor's signature, an organized effort is under way to secure the commencement of the work without a delay of years, as in the case of the Harlem Hospital, now being built, which was authorized in 1897. The bill calls for $200,000 to be used for acquiring a site, and $300,000 for the erection of a building.

Gift to Long Island College Hospital.—Henry W. Maxwell, President of the Board of Regents of the Long Island College Hospital in Brooklyn, is having a three-story fireproof building erected at Amity and Henry Streets, adjoining the hospital. He will present it to the hospital as a dormitory. The building will cost $60,000. The hospital nurses have heretofore been obliged to live in private houses in the neighborhood.

Ill-timed Cleanliness.—It is a recognized scientific fact, we believe, that the street dust of cities is full of all kinds of bacteria, and especially of the germs of the dreaded tuberculosis. Naturally it must be most deadly in the places where men most do congregate. If there be any more densely populatd area upon the face of this globe than the approaches of the Brooklyn Bridge between 8.30 a.m. and 9.30 a.m., it has yet to be discovered. Here, certainly, no sweeping ought to be attempted in the rush hours. Surely, even the intelligence of an assistant district foreman of street-cleaning ought to be sufficient to teach him that the sweeping of granulated street refuse into the faces of unoffending and helpless pedestrians is a practice as dangerous as it is unpleasant. The evil is not confined—in Brooklyn, at any rate—to any one region. In Nostrand Avenue, for instance—a great thoroughfare—sweeping frequently begins at eight a.m., just at the moment when men are hurrying from their breakfast-tables to their offices. Moreover, in this instance, the sweepers seldom even pretend to use any water for sprinkling. So common is the evil that comparatively little attention is paid to it, yet it involves an actual danger which very properly might provoke the interference of the Board of Health. Then again, in a civilized community, personal comfort and decency ought sometimes to be taken into consideration.

New York State Medical Association.—There will be a meeting of the Fifth District Branch of the New York State Medical Association, under the presidency of Dr. Emil Mayer, at the Academy of Medicine, Hosack Hall, No. 17 West 43rd Street, Manhattan, on Tuesday, May 6, 1902, at 1.30 p.m. The order of business will be an executive session followed by a scientific session, the latter beginning at 2.30 p.m. At the scientific session the following papers will be presented: "The value of X-rays in Medical and Surgical Diagnosis," by Walter H. Brickner, M.D.; "Diseases of the Air-passages from the Standpoint of General Medicine," by D. Bryson Delavan, M.D.; "Affections of the Skin with Stereopticon Exhibitions," by William S. Gattheil, M.D.; Installation of Newly-elected Officers.

Appointment to Mt. Sinai Hospital.—Drs. M. L. Maduro and Charles Preston Denton have been appointed anesthetists to Mt. Sinai Hospital. The object of two appointments is to fill the large service.

Physician for Indian Service.—The United States Civil Service Commission announces that on June 3, 1902, examinations will be held for the position of physician in the Indian Service. Information relative to the subjects and scope of the examination may be found in Section 128 of the Manual of Examinations, revised to January 1, 1902. Age limit, twenty-five to fifty-five years. From the eligibles resulting from this examination it is expected that certification will be made to the position of physician at the White Earth Agency, Minnesota, at a salary of $900 per annum, and to other similar vacancies as they may occur. This examination is open to all citizens of the United States who comply with the requirements. Competitors will be rated without regard to any consideration other than the qualifications shown in their examination papers, and eligibles will be certified strictly in accordance with the civil service law and rules. Persons who desire to compete should at once apply either to the United States Civil Service Commission, Washington, D.C., for a copy of the Manual of Examinations and application Forms 304 and 375. The application should be properly executed and filed with the Commission at Washington prior to the hour of closing business on May 23d.

The Association of American Medical Colleges.—The next meeting of the Association of American Medical Colleges will be held in Saratoga on Monday, June 9th at 10 a.m. The program will consist of two portions, one of which will be educational and open to visitors. The several members of the Association of Southern Medical Colleges are invited to be present and take part in the discussion. The meeting will be opened by the address of the president, Prof. Victor C. Vaughan of the University of Michigan. This will be followed by a symposium and discussion on the question of how far the requirements for entrance to a medical college should include modern languages, Latin, and higher mathematics, and to what extent a knowledge of the biological sciences, chemistry and physics should be deemed necessary. This symposium will be participated in by the following gentlemen and any others who choose to enter the discussion: Hon. James Russell Parsons, Jr., Secretary of the Board of Regents of the University of the State of New York; Dr. George M. Kober, of Georgetown University; Dr. Robert Reyburn, Dean of Howard University; Dr. W. H. Earles, of the Milwaukee Medical College; Dr. Joseph T. Smith, of the Woman's Medical College of Baltimore; Dr. John L. Heffron, of the Syracuse Medical College; Dr. E. A. DeSchweinitz, Dean of the Medical Department of Columbian University; Dr. O. U. B. Wingate, of the Wisconsin Medical College; Dr. R. L. Whitehead, Dean of the Medical Department of the University of North Carolina; Dr. G. W. Hubbard, Dean of the Meharry Medical College.

The "Bulletin of the American Academy of Medicine," Charles McIntyre, M.D., Editor, Easton, Penn., is the official organ of this Association in which the Transactions of the Association have been published since the first meeting. The bibliography of the Association will be found in the Transactions of the Association for 1899 published in the "Bulletin" for June, 1899, page 3. A bound copy of the Transactions has been forwarded to the Dean of each medical college and to the secretary of each State Board of Health. The secretary cannot recommend too strongly that the members of the Association support the "Bulletin" liberally by their subscriptions.

No Cuban Quarantine Now.—Dr. Doty, Health Officer of the Port of New York, recently made the following announcement concerning Cuban quarantine regulations: "I have decided not to inaugurate the quarantine restrictions at this time. Cuba is free from yellow fever and unusual care is being taken to keep it free. The summer regulations will not go into effect before June and probably not then. I shall be guided entirely by the reports in future from Havana and other ports in Cuba. I recognize that the quarantine regulations against Cuba are a great obstruction to commerce and I wish to place as little hindrance to free intercourse as will be consistent with the protection of the public health."

Bellevue Nurses' New Home.—A nurses' home and training school will be built on the site of the old Matthews soda-water factory, opposite Bellevue Hospital. The property was recently sold by George Matthews to the recently organized Bellevue Realty Company for $326,000. The Bellevue Realty Company was organized by wealthy friends of the Bellevue Training School for Nurses, which has long been in need of modern quarters.

PHILADELPHIA.

Slight Increase in Smallpox Cases.—The epidemic of smallpox which is rapidly abating showed a slight exacerbation for the week ending April 26th, there being 31 new cases and 6 deaths as compared to 26 cases and 1 death during the previous week. There was also an increase in the number of typhoid-fever cases.

Pennsylvania Hospital.—During the fiscal year ending April 26th the admissions to the wards of the Pennsylvania Hospital numbered 4,706. During the same time 23,040 cases were treated in the receiving wards.

Bryn Mawr Hospital.—The Garrett memorial wing of the Bryn Mawr Hospital and the new ward for children were formally opened April 26th. The new wing, which was built as a memorial to William E. Garrett, has doubled the size of the hospital as originally constructed. It contains twelve rooms for private patients and has been furnished complete at a cost of $10,000. This addition has made possible the new children's ward in the old building.

Licensing the Social Evil.—At a meeting of the Social Purity Alliance, held April 24th, a recent report of the Grand Jury "advocating the licensing and regulation of vice by the civil authorities" was repudiated as being apt to influence evil opinion in an evil direction. Dr. O. E. Janney of Baltimore spoke of the ineffectiveness of the control of vice by the civil authorities. The segregation of vice, he said, is proven to cause a pest-hole in the city of New York. The remedy is to impose a fine of $1,000 on the owners as well as on the occupants of buildings used for immoral purposes.

Pathological Society.—At the annual conversational meeting, held April 24th, Dr. M. P. Ravenel delivered the address upon the relationship of human and bovine tuberculosis. Many experiments to determine their intercommunicability were detailed, among which were successful transmission from human beings to cattle and from cattle to monkeys. Dr. Ravenel still maintains that bovine tuberculosis is transmissible to human beings.

Report of Delaware Sanitarium.—The twenty-fifth annual report of this institution shows that since its completion there have been 2,304,094 women and children cared for during the summer months at the sanitarium. Not a single serious accident has occurred while handling this immense number of people.

Carnegie and the Pittsburg Hospitals.—Mr. Andrew Carnegie has offered to aid in building a $2,000,000 hospital for workingmen at Pittsburg, but refuses to erect such a hospital himself. This he claims would relieve the employer of all responsibility and perhaps in the end result in making him careless of the lives of his employees. The workingmen would also feel dependent, which many of them would resent. Mr. Carnegie favors an institution in which all the capitalists are interested; one to which they can send their workmen and pay for their care. To such an institution he will contribute liberally.

CHICAGO.

Revision of Dunning Rules.—It has been decided to formulate new rules to govern the County Hospital for the Insane and the Poor Farm. The appointment of a medical director, head nurse and a business manager makes this necessary. Drs. Hugh T. Patrick, Frank Billings, Julia Lathrop, President Hanberg, Commissioner W. K. Walker, and J. E. Flannigan were appointed a committee for this purpose.

Frances E. Willard Hospital.—The trustees of this hospital are considering a proposition to acquire additional east frontage in Lincoln Street, north of Harrison Street, and the erection of a hospital building which will cost approximately $250,000. Bequests have been made of about $21,500, which leaves a little more than $228,000 to be raised.

Banquet to Ex-Internes of Cook County Hospital.—On April 19th, Warden Healy of the Cook County Hospital, tendered a banquet to the ex-internes of that institution. Dr. William E. Quine was toastmaster and speeches were made by Drs. James B. Herrick, R. B. Preble, John B. Murphy, and others.

Ichthyosis Hystrix.—Dr. E. A. Fischkin reported a case of this disease and showed the patient to the Chicago Medical Society, April 23d. The case is interesting on account of its extreme rarity and striking form. The patient, a boy eight years old, was born with a large red spot over the epigastrium which existed for some twelve months. After a year the skin over the spot became dry and scaly, the red color changed to a dark brown, and dirty-looking patches began to appear on the skin, spreading gradually in different directions until at about the age of three the larger part of the body was more or less covered with these excrescences. From that period the disease has been quite stationary. The lesions affect the left side of the body more than the right and are distinctly margined at the median line. The component elements of the lesions vary in different parts of the body. In some, as over the chest, they are made up of small horny accumulations resembling the papules of senile keratosis, in other parts, as over the neck, axillæ and arms, they consist of projecting warts; again in other parts, as over the knee and heel, they represent firm, dense and shiny plates. In color they vary from light gray to dark brown and deep chocolate. The parts affected are the neck, chest and abdomen, which are almost entirely covered with these crusts, part of the back and gluteal region, left leg and heel. The most striking incrustations are found over the heel of the left foot, where they are hard, about a quarter of an inch thick and black in color, giving the appearance as if the heel were clad in a sheath of hard rubber or coal. The left arm is cyanotic and the backs of the fingers are covered with thick, black incrustations.

Oxyuris Vermicularis in Appendix.—Dr. William Cuthbertson exhibited an appendix in which the cause of the disease was the oxyuris vermicularis. The patient was a married woman, about forty-five years of age. The worms were alive and actively moving, some of them crawling off on his fingers after opening the appendix throughout its length. These worms are commonly supposed to infest only the sigmoid and rectum and are known as thread-worms. About five years ago he reported a case of appendicitis in a woman in which he found a lumbricoid worm. The two cases resembled one another in the excruciating pain, somewhat high temperature, the rigid abdominal muscles, and, on opening the abdomen, the absence of peri-appendicular inflammation and adhesions. The author had no doubt that numbers of cases of appendicitis with only one attack, and commonly called catarrhal appendicitis, were caused by these intestinal parasites. This patient made an excellent recovery.

Large Gall-Stone.—The next specimen Dr. Cuthbertson showed was an enormous gall-stone which had been removed from the rectum of a man in whom it caused obstipation. At the postmortem the pyloric end of the stomach, the duodenum, and the hepatic flexure of the colon were all found to be adherent in one large mass, the union being so firm that the bowel could only be separated from the liver by the knife. The stone was found to have perforated, not the duodenum, but the hepatic flexure of the colon. The gall-bladder was obliterated and the opening into the colon was only large enough to admit a small probe. The common duct was still patulous, permitting the flow of bile into the duodenum, which would account for the persistent regurgitation of bile into the stomach and bilious vomiting. There was no trace of malignancy present either in the gall-tracts, liver or stomach.

CANADA.

The Birth-Rate in Ontario.—The Registrar-General of Ontario has handed out his report to the medical profession for the year 1900. According to this report there were 46,127 births in the Province in 1900, as compared with 44,705 in 1899, which shows an increase of 1,422. This gives a rate of 19.6 on the estimated population of 1900. The birth-rate of the actual population according to the census of March 31, 1901, would be 21.1.

Deaths from Tuberculosis in Ontario in 1900.—This disease caused 3,484 deaths in Ontario in 1900. The excess in cities is notable, there being 1,081 deaths in a population of 475,222, the rates being 2.27 for cities per thousand as compared with 1.59 for the Province as a whole, or 1.4 for the rest of the Province outside the cities. The death-rate in some of the leading cities in the Province in 1900 was as follows: Toronto, 2.3; Hamilton, 1.8; Ottawa, 2.3; London, 1.8; Kingston, 3.1.

Deaths from Cancer in Ontario in 1900.—There were recorded in the Province of Ontario in the year 1900 1,055 deaths from cancer as against 1,041 and 975 for the two preceding years. Commencing with 1891 the following is the total number of deaths for the last decade: 579, 676, 678, 621, 620, 731, 927, 975, 1,041, 1,055. It will be seen from these returns that the death-rate from this cause has increased by 100 per cent. in the last ten years. Of the total of 1,055 in 1900, 329, or nearly one-third, occurred in the fourteen cities of the Province. This would lead to the conclusion that there was a greater prevalence of the disease in the urban than in the rural districts.

Convocation at Bishop's Medical College, Montreal.—At the annual convocation ceremonies of the medical and dental faculties of Bishop's College University last week Dr. D. K. H. Cowley delivered the valedictory address, which was replied to by Dr. W. E. Deeks on behalf of the medical faculty. The Dean, Dr. F. W. Campbell presented his annual report. It stated that the attendance during the past session had been about the same as for the previous session, that a building fund had been inaugurated and $2,000 already subscribed, and that Dr. Wood, one of the leading oculists of Chicago, had endowed permanently the gold medal which he had for some time been giving annually.

Dr. Roddick's Medical Bill.—Dr. Roddick went down to the city of Quebec on April 19th to interview the Rev. Father Mathieu, C.M.G., the local director of Laval University, and to endeavor to overcome the objections which it was stated this university had to the passage of Dr. Roddick's bill for a Dominion Medical Council. It is understood that the interview was a satisfactory one and that many difficulties in the way of enacting this proposed legislation were removed.

Personals.—Dr. H. A. Beatty, M.R.C.S., of Toronto, who for the past four years has been doing post-graduate work in England and on the Continent, has received a cable from Mr. Tubby of the Westminister Hospital, London, England, offering him the surgical registrarship of that hospital. Before returning to Toronto Dr. Beatty had been senior house surgeon at this hospital. It is understood that he will accept the honor. Drs. D. M. Anderson, house surgeon at the Toronto General Hospital, and J. M. Jory of St. Catherine's, Ont., have been appointed medical officers to the fourth Canadian Contingent to South Africa and will sail from Halifax on May 7th.

GENERAL.

Pure-Food Bill Supported.—Mr. McCumber of North Dakota, Chairman of the Committee on Manufactures, addressed the Senate in Washington, this week, on the bill "to prevent the adulteration, misbranding, and imitations of foods, beverages, candies, drugs, and condiments in the District of Columbia and the Territories, and for regulating interstate commerce therein." The object of his address, he said, was to convince the Senate of the very great importance of the subject to the American people. For a quarter of a century nearly every State in the Union had been struggling, he said, with the question of procuring pure foods. Experience had proved that it had been impossible to obtain uniformity in State laws. This bill was not so drastic as had been proposed heretofore, and he believed that no legitimate objection to it could be raised. It attempted to regulate the sale of only such foods as entered into interstate commerce, and Congress, therefore, had ample authority to deal with the subject. Mr. McCumber enumerated many of the frauds in food products which constantly were being foisted upon the public, and declared that the time had come for Congress to act. The amount of deleterious food products placed upon the market each year, he said, was valued at fully $1,170,000,000, while the total amount of adulterated food products each year was nearly $4,000,000,000.

England's Campaign Against Cancer.—The recent appeal for a great fund for use by the medical profession in England for a systematic investigation of the cause of and the cure for cancer is meeting with liberal response, and intense interest in the subject is shown by the greatest people in the land.

Medical Society of City Hospital Alumni of St. Louis.—The regular meeting of this Society was held on Thursday, April 24, 1902, in the Board of Education Building. Dr. W. T. Coughlin presented pathological specimens; Dr. George Homan reported two contrasted cases of typhoid fever, and Dr. Francis Reder read a paper on "Conditions I Have Found in Operating for the Radical Cure of Hernia."

Yellow Fever in Guiana.—Seventy-two cases of yellow fever are reported in French Guiana, of which number 40 cases have been fatal. At Cayenne, 11 cases, with 5 deaths, have occurred.

Sleeping Sickness in Congo.—An epidemic of this malady rages in Congo; so fatal has it been that in one populous village there remain but 6 women, 10 men, and 1 infant.

Congress of German Otologists.—Will meet at Trier, May 16 to 17, 1902.

Variola in Belgium.—An epidemic of variola exists in Belgium; the disease was, apparently, imported from London in ships landing at Anvers.

German Neurologists and Alienists.—The Neurologists and Alienists of Southwest Germany will meet at Baden-Baden May 24 to 25, 1902.

Cholera in Egypt.—Nineteen cases of cholera and 14 deaths from that disease are reported at El-Tor.

Cholera Among Troops.—Cholera is reported among the American soldiers in the Camarines Provinces of Southern Luzon and elsewhere, but so far few Americans have been attacked, the disease being mainly confined to natives and Chinamen. In Manila there have been 555 cases and 449 deaths from cholera, while the Provinces report 1,599 cases and 1,169 deaths.

Therapeutic Value of Strawberries.—In recent experiments with ten different varieties, M. M. Portes and Desmoulières isolated crystals of salicylic acid and an extract of the fruit yielded an intense violet color with perchlorate of iron, indicating the presence of salicylic acid in considerable quantity.

Lightning Kills 700 a Year.—From 700 to 800 persons are killed annually by lightning in the United States, according to estimates made by Alfred J. Henry of the United States Weather Bureau. In 1900 the Bureau received reports of 713 cases of fatal lightning strokes. In the same year, according to the reports collected by the Weather Bureau, 973 persons were more or less seriously injured by lightning. The loss of life from lightning is greatest in the Ohio Valley and the Middle Atlantic States. If density of population only be considered it is greatest in the upper Missouri Valley and in the middle Rocky Mountain region. Of the 713 fatal cases reported in 1900, 291 persons were killed in the open, 158 in houses, 57 under trees and 56 in barns. The circumstances attending the death of the remaining 151 were not reported. This seems to dispose of the old superstition that the safest place to be in during a thunderstorm is the open country and the most dangerous, under a tree.

To Test New Antiseptic in India.—By an expedition to the disease-stricken parts of India, the effectiveness of benzozone is to be tested. Profs. Victor C. Vaughan and Frederick G. Novy, of the Medical Department of the University of Michigan, leave for Asia about the middle of June. Last winter Prof. Novy announced the discovery of benzozone, an organic peroxide.

Obituary.—Dr. Theodore Walser, one of the oldest and best-known physicians in the borough of Richmond, died recently at his home on St. Marks Place, New Brighton, Staten Island, after a lingering illness. Dr. Walser was sanitary superintendent of the borough. He was a specialist in contagious diseases and an expert bacteriologist. He was attached to the Quarantine station for many years and was a member of the Board of Health in the old village of New Brighton. He was seventy-seven years old. A son, Dr. William C. Walser, survives him.

Dr. Peter R. Thombs, one of the most widely-known physicians in Colorado, died recently at his residence at Pueblo, Col., after an illness of two weeks from a complication of diseases. Dr. Thombs served through the war as an army surgeon with distinction and soon after came to Pueblo. He was one of the oldest physicians in the State. For several years he was Superintendent of the State insane asylum. Dr. Thombs was sixty-two years of age. A widow and one daughter survive him.

Dr. Joseph P. Turner, one of the oldest of the alumni of the University of Pennsylvania, died recently in Trenton, aged seventy-nine years. He held several municipal offices in Trenton and was an active Democratic orator. He was in the cavalry service in the Civil War. He had been in practice for over fifty years.

Dr. Philip F. Fulmer, one of the wealthiest and most widely-known physicians in Pike County, Pa., and proprietor of the High Falls Hotel at Dingmans, a summer resort, died suddenly of heart disease April 29th, while attending the funeral of his neighbor and lifelong friend, the Hon. Jacob B. Westbrook, who was a Representative in the present State Legislature of Pennsylvania. Dr. Fulmer was born at Stewartsville, N. J., in 1830. He was a graduate of Lafayette College and Pennsylvania University.

OBITUARY.

FREDERICK A. CASTLE, M.D.

Dr. Frederick A. Castle, aged sixty years, and one of New York's most widely known physicians, died in Roosevelt Hospital Sunday, April 27th, after a prolonged illness. He was taken ill about six months ago, and a week ago he was removed to Roosevelt, where he was twice operated upon. He died as a result of the second operation.

Dr. Castle was a medical student in Bellevue when the Civil War began. Without waiting to take a degree, he with a number of other young men, many of whom afterward became well-known physicians, formed the Medical Cadet Corps, and were sent to the front as a part of the Medical Department of the army. He later left this organization and served for two years in the Navy. Toward the close of the war he returned to Bellevue, where he was graduated.

Dr. Castle became widely known in the profession through his editorial work in connection with numerous medical journals and magazines. For a time he occupied the chair of therapeutics at Bellevue, and was later visiting physician at the Presbyterian Hospital. He was largely interested in the building of the Academy of Medicine, in West Forty-third Street, and was once its treasurer. Among the clubs of which he was a member are the University, the Grolier, and the Loyal Legion. Outside of his profession he was interested in bookbinding and designing, and as a member of the Grolier Club he planned its "Dutch Room."

CORRESPONDENCE.

FOREIGN SOCIETIES.

British.

LOW PROTEID METABOLISM—POSTURAL TREATMENT OF BRONCHIAL DILATATION AND CATARRH—BAZIN'S DISEASE—APPENDICITIS WITH UNUSUAL COURSE—CEREBROSPINAL RHINORRHEA—CULTIVATION OF THE TUBERCLE BACILLUS—UNUSUAL CANCER—SUBCUTANEOUS PUNCTURE OF JOINTS—VACCINIA—TYPHOID FEVER—EMPYEMA.

The scientific societies of the United Kingdom have all had numerous meetings since our last report. They are as active as possible at this season of the year and the past month has been more busy than usual. V. Harley and F. Goodbody, at the Pathological Society of London, March 5, 1902, presented a collaboration on the subject of low metabolism. The popular belief is that when large eaters remain thin it is because the large amount of food passes through them unaltered. The authors' contended that this is not correct. Certain individuals have a low metabolism and need less food than others. Three cases were described in which the patients were kept under similar conditions, namely in bed, with only massage for exercise. The diet, the urine, and the feces were all carefully analyzed. The feces were divided into different periods, by means of large doses of charcoal. A woman weighing seventy-two kilograms was found to live on a very small amount of food, in fact, as little as one pound of mutton in twenty-four hours. During the seven days of observation she lost only two kilograms in weight and during the first six days only one. In this period the total nitrogen in the food was 12.16 grams. The average output of nitrogen was 13.51 grams, showing a loss from the tissues of about one gram a day. During the period of seven days she had only five movements from the bowels and the doses of charcoal showed that it took from sixty to seventy hours for them to pass through the body. The quantity of nitrogen in the feces was extremely small, being only 0.48 grams. A man on a diet of one pound of meat in a day, taking 14.72 grams of nitrogen, excreted 22.71, losing therefore seven grams of nitrogen. During four days of observation this man lost two kilograms in weight. The nitrogen in the feces was 0.66 and the fat 2.43 grams. The woman was now put on a very small diet during two periods of five days each. In the second period she took 6.08 grams of nitrogen, the diet containing only 4.16 calories per kilogram. During this time she passed 7.32 grams of nitrogen per diem in the urine, so that during the five days there was a loss of one gram of nitrogen per diem from the tissues. During the two periods in which she took this remarkably small diet her average weight was for the first 66.8 kilograms and for the second 66.5. The loss in weight was very small indeed.

W. Ewart, at the Clinical Society of London, February 28, 1902, exhibited a case illustrating the treatment of bronchial dilatation and bronchial catarrh by posture and respiratory exercise. The method consists in keeping the foot of the bed raised sometimes to considerable height, while the shoulders are low and the head upon a pillow. The first case in which he carried out this treatment has been published. Other cases, including phthisiscal patients, have been under this treatment. The method, however, had been previously thought of and described by Quincke. The patient exhibited was a man twenty-one years old, suffering from bronchial dilatation.

H. L. Barnard, at the Harveian Society of London, February 20, 1902, showed a young woman the subject of Bazin's disease, with ulcers on her legs for the last five years. They appeared first as nodules under the skin, like erythema induratum, burst, broke down, formed little round ulcers of shilling-size, punched out extraordinarily like specific ulcers, from which differentiation is difficult. They are supposed to be tuberculous and he so regarded this patient who had had tuberculosis of the spine and left ankle; the latter was cured by plaster-of-Paris dressing. The ulcers referred to left a pigmented scar very like that after syphilitic ulcer. Hutchinson had pointed out that such subjects are singularly predisposed to chilblains. The present patient had never had chilblains or enlarged glands of the neck. In a similar case he had endeavored to find the bacillus, but had failed. Injection of the substance into guinea-pigs and rabbits did not produce tuberculosis.

Campbell Williams, in the discussion, said he thought there was no doubt about the diagnosis, but one point about the case was abnormal, namely, its symmetry. In the original description of the disease Bazin said he had never seen it above the knee—an obvious mistake because it might even be limited to that region. Recently he had seen a woman with a patch on each knee on the vastus internus. The lower part of the limb was free. It might occur on the hands also. The present case was typical because it had ulcerated. Occasionally resolution occurs without ulceration, leaving a fawn-colored depression. The lesions are often mistaken for tubercle, more frequently for syphilis. Tonics, cod-liver oil, warmth, antiseptics, and cleanliness are the indications. Removal to a warmer climate usually cures.

W. B. Bell, at the Liverpool Medical Institution, February 27, 1902, related a case of appendicitis of unusual course. Operation revealed an empty abscess cavity. The stump of the appendix was removed from the cecum and its apex from the ileum to which it had adhered. Here was a large perforation through which the abscess had discharged into the bowel. He closed the perforation, packed the cavity and saw his patient recover without interruption.

C. F. Larkin read notes of the case of cerebrospinal rhinorrhea. The fluid escaped from a fracture of the base of the sphenoid bone. The patient lived twenty-seven days after receiving his fracture of the skull and then died of septic meningitis.

E. J. McWeeney, at the Royal Academy of Medicine in Ireland, February 21, 1902, demonstrated a case of tuberculous pleuropericarditis, with unusually numerous tubercle bacilli, so that direct cultures on Loeffler's serum gave abundant growths. He exhibited these primary cultures showing the lichenoid appearance of the colonies and their characteristic tendency to grow on to the glass. Secondary cultures on glycerinated potato, luxuriant, of light reddish hue, with the bacilli forming a scum on the dilute glycerin, were shown. He also demonstrated tertiary cultures on glycerin agar, which were succeeding whitish in color. The patient was a man, fifty-five years of age, who suffered from tuberculous pleurisy of the left side, tuberculous bronchopneumonia on the right side, but without lesion of the pleura of the right side; tuberculosis of the superior pericardial glands; thickening of the parietal layer of the pericardium, with some caseation; enlargement of the spleen to a degree appreciable during life, with a studding of it by yellowish, necrotic masses, larger than miliary tubercles and very abundant in the germs. In the affected parts of the pericardium the bacilli formed masses large enough to be seen with a low power in the stained preparations.

T. A. Helme (Manchester), at the North of England Obstetrical and Gynecological Society, February 21, 1902, showed the following specimens of unusual cancer: (1) A carcinoma of the neck of the uterus with double pus-tube, removed by the vagina from a nullipara, twenty-three years old, married twelve months, infected by her husband with gonorrhea and suffering from the symptoms of menorrhagia and discharge for about six months. The points of interest in the case are the early age for cancer, its occurrence in a nullipara, and its association with gonorrhea. Microscopically the growth was columnar carcinoma. (2) A polypoid carcinoma of the body of the uterus, removed by the vagina from a virgin, forty-one years old. The operation was difficult because of the smallness of the vagina and the perineum had to be incised and the front wall of the womb cut through. The ligaments were clamped. This growth was adenocarcinoma, originating on the right side of the body of the uterus forming a large polypoid mass, which protruded into the vagina. (3) A solid ovarian tumor, primarily (?) tuberculous peritonitis with ascites. Wasting, ill health, enlargement of the abdomen, evening rise of temperature, morning subnormal temperature, with the signs of considerable free fluid in the abdomen and those of a solid ovoid tumor in the right ovarian region, and normal uterus were discovered sometime before the operation. The history, general condition, and physical signs suggested tuberculosis of the peritoneum rather than simple ascites caused by the tumor. The abdomen was opened and the fibroma of the right ovary removed, showing no evidence of malignancy. The whole posterior surface of the right broad ligament and of the uterus was covered with thick, cheesy tuberculous-looking material, and the peritoneum of the pelvis showed the usual signs of tuberculosis. Both Fallopian tubes appeared to be healthy. The ascites fluid was removed and the abdomen was closed, and at the present time, nine months after the operation, the patient appears to have entirely regained her health.

T. P. Teale, at the Leeds and West Riding Medico-Chirurgical Society, February 28, 1902, read a note on the relief of distended joints by the establishment of subcutaneous leakage. The first case on which this principle was carried out was one of acute distention of the knee with intense pain. This he punctured with a narrow knife expecting to find pus. As the fluid which escaped along the blade was but chiefly turbid synovial fluid, instead of opening and draining the joint externally, he made three or four punctures half an inch long into the synovial cavity. The result was that the fluid escaped into the tissues outside of the joint and was thence harmlessly absorbed. There was at once relief of pain and a rapid recovery followed. Since then he has repeatedly and successfully done this operation. J. Hardy of Manchester has written to him that in his own experience several times in early disease of the hip, this procedure had caused relief, but he had not continued to use it because most cases to which it is applicable do better after early excision; because the disease in the majority of these cases begins in the subchondral layer of bone, and then affects the synovial membrane.

Dr. Simgar, at the Winsor and District Medical Society, February 26, 1902, read a paper on the results of vaccination of 1,060 adults, showing the number of vesicles in primary vaccinations, in secondary vaccinations and in tertiary or later vaccinations and in the subjects of smallpox. The percentage of successes was recorded and all failures and doubtful results noted. Stress was laid on the want of uniformity in the strength of lymph on the market. The clinical aspect of revaccination was the chief aim of the paper. Most cases present little constitutional disturbances and the vesicles run a perfectly normal course, but in a few the following were noted: Papules from dressing irritation in 24 cases, pustules spreading beyond the vaccinated area in 6, boils in 21, carbuncle in 1, abscesses in 4, relapse of old previous skin trouble in 1, eczema in 3, herpes in 1, erythemia in 23, auto-inoculation in 5, and generalized vaccinia in 1. The high percentage of successes among patients who had had smallpox was noted and conclusions were drawn, without describing a staphylococcus which had been grown from the lymph. The paper concluded with an expression of the hope that a specific agent of vaccinia might soon be discovered, so that a standarized lymph, free from extraneous organisms, might be used. E. S. Norris read a similar paper on 1,000 cases of vaccination and revaccination, with an account of the smallpox epidemic of 1876 witnessed by him at the Homerton Fever Hospital. The conclusions were that neither vaccination nor revaccination was absolutely preventive against an attack of smallpox, but were operative in very many cases. Tables were given showing the incidence of smallpox in the vaccinated and unvaccinated respectively. Norris's experience agrees with the common knowledge that smallpox is very fatal among unvaccinated infants. The value of good marks compared with bad marks was next discussed, adding the point that the value is more manifest after puberty, for in early life almost any kind of vaccination might suffice to obviate the worst effects of smallpox. The question whether vaccinia and variola could run their course together was next entered into. The paper ended with an allusion to the very high protective influence exerted by revaccination.

A general discussion on the subject of typhoid fever was held at the Bradford Medico-Chirurgical Society, February 18, 1902, the public health aspect of the disease being introduced by A. Evans, its pathology and diagnosis by F. W. Eurich, and its treatment and complications by H. J. Kemble. Evans said that in Bradford from 1897 to 1900, 934 cases occurred in houses, of which 737 houses were furnished with midden closets and the others with water-closets or "tipplers." He exhibited Pettenkofer's chart of Munich, in which the area of subsoil water and the prevalence of typhoid fever were represented. Evans expressd the opinion that this theory was not proved and that the decrease of typhoid fever in Munich was due to the general improvement in the sanitary conditions of the housing and living.

Eurich dealt with the bacteriological diagnosis of typhoid fever, described the characteristic culture and morphology of the bacillus typhosis, and added that the direct bacteriological test is impracticable for diagnostic purposes. He alluded to the direct examination of the splenic blood obtained by aspiration and condemned it as dangerous and uncertain. Widal's test was described and noted as trustworthy only if a proper proportion of serum and bouillon culture were present, stated to be about 1 to 40. Dr. Campbell, speaking of treatment, said that up to the present no very satisfactory result had been obtained from treatment with anitoxic sera. Drug treatment was divided into three classes: (1) Intestinal antiseptics; (2) cardiac and respiratory stimulants; (3) antipyretics. The last should be condemned, except in rare cases. Stimulants should be given according to general indications. Strychnine applies in large doses for a short time in collapse, digitalis in small doses for diuresis and cardiac support; alcohol is the all-round routine stimulant. Systematic baths give a lower percentage of mortality than others, but unfortunately can be carried out only in hospitals or where there are many attendants. In the dietary milk is the best all-round article. Dr. Dunn related the experience with typhoid fever among the troops in South Africa. He said 30 per cent. of the cases showed no eruption. Milk was usually not available, except sweetened and condensed, which the patients disliked. They therefore had to use pulped bread, thin bread and butter and beef tea. In ten days or less from the time that the temperature was normal the soldiers usually shifted for themselves and had the ordinary diet of bread, biscuit, jam and corned beef. Relapses were not frequent and deaths from perspiration uncommon.

Dr. Jacob, at the Nottingham Medico-Chirurgical Society, February 19, 1902, read a short paper on the diagnosis and treatment of empyema. Bronchiectasis at the base of the lung, subphrenic abscess, and pyopericardium might be mistaken for empyema. Aspiration of the pus was necessary for diagnosis. Examination of the pus is valuable. Thick, creamy pus shows meningococcus, thin pus streptococcus, putrid pus a possibility of subphrenic abscess. With regard to treatment, aspiration alone is not trustworthy. A removal of a piece of the ninth rib just outside the angle of the scapula and free drainage, he had found most successful. Tuberculous cases never do well if opened and drained, because they become infected by other organisms and death is hastened. The value of treatment by means of irrigation and baths of a weak solution of boric acid was stated. The application of Estlander's operation for chronic cases was noted and suggestions regarding technic offered.

PRESERVATION OF SUPRARENAL SUBSTANCE.

To the Editor of the Medical News:

Dear Sir—Perhaps it will be of some interest to state that the addition of formaldehyde solution, 40 per cent. fraction of a drop per ounce, will preserve indefinitely solutions of the suprarenal capsules. It will also preserve cocaine and eucaine solutions and the solutions are non-irritating when used locally or hypodermatically. The addition of suprarenal to a cocaine or eucaine solution intensifies its action when used by the infiltration method or otherwise. It prevents the post-operative superficial hemorrhage which is sometimes annoying after the parts regain their tonicity. When the suprarenals are given in conjunction with depressants (notably aconite and gelseminum) full doses may be exhibited and the full physiological effects produced without alarming symptoms. Specimens for microscopical work may be hardened quickly in a formalin solution, 30 to 60 drops to the ounce, a section made and mounted in Canada balsam which serves for all ordinary purposes. The specimen does not become blanched or shriveled, as when alcohol is used.

Chas. W. Heitzman, M.D.

St. Louis, Mo., March 24, 1902.

SOCIETY PROCEEDINGS.

ASSOCIATION OF AMERICAN PHYSICIANS.

Seventeenth Annual Meeting, Held at Washington, D. C., April 29 and 30, 1902.

First Day, April 29.

President's Address.—Dr. James C. Wilson of Philadelphia made a few appropriate introductory remarks, saying that a glance at the papers of his predecessors, as published in the Transactions of the Association, would offer an excellent epitome of the development of medical science during the years of the organization of the Association. As many of the members had been interested in hospitals and hospital management, it was but natural that many of the communications bore on that side of medical questions. The evolution of American medicine and the medical practitioner of this country could be traced as one read such a volume and, moreover, the history of the foundation of medical societies such as their own was the history of the growth of the science in this country. Over one hundred and fifty years ago the first societies were founded. At that time there were two, now since dead, one in Boston and one in New York. The now oldest living medical society was founded in Litchfield, Connecticut, in 1765, and in the following year, the second oldest, that of New Brunswick, New Jersey. The Massachusetts Medical Society effected a permanent organization in 1781, the College of Physicians in Philadelphia in 1786, and from those early days down to May, 1847, many local societies came into being. At that later date the American Medical Association came into existence. This society has been able to bring about much needed union. It has made of the medical profession of this country a united brotherhood and the feeling is expressed that the time may soon come when, by the agency of the united medical men of this country, the beauty, the nobility, and the utility of the work of the medical practitioner may be recognized and the efforts made for advance in medical education may receive their due reward. Some defects were pointed out which marred the otherwise high character of the American Medical Association. There had hitherto been a tendency to regard local interests which had resulted in a stultification of its work and the raising of a school of medical politicians. By the new reorganization it is to be hoped that this old order of things will pass and that the onward problems of medicine as a science and as an art will have their due position in the American Medical Association. In the meantime the necessity for the discussion of highly technical questions has given rise to the development of our National societies and by the gradual coalescence of bodies of specialists the Congress of American Physicians has come to represent a body of practitioners and laboratory workers engaged in the investigation of the deeper technical problems of medical research, and before which only really valuable and original contributions may be offered to the stock of medical experience. Dr. Wilson referred to the stimulating influences that society organization had upon the medical practitioner and the development of discussion and the bringing out of the younger men what best was in them.

Necrology.—During the past year three of the charter members of the Association died, and brief mention was made of their activities and their part in the history of the Association. These were Dr. John T. Metcalfe (see MEDICAL NEWS, p. 276); Dr. W. W. Johnston (see MEDICAL NEWS, p. 616); and Dr. Meredith Clymer (see MEDICAL NEWS, p. 801).

Toxicity of Ammonium Compounds.—Drs. B. K. Rachford and W. H. Crane of Cincinnati have sought to determine in studies made on mice the comparative toxicity of different salts of ammonium, sodium, potassium, calcium and magnesium combined with various acid ions, organic and inorganic. As far as the ammonium compounds are concerned, they were all found to be toxic notwithstanding their acid combinations. In toxic doses, they increase the reflex excitability of the spinal cord, bring about tonic and clonic convulsions, diminished respiratory activities and death. The acid portion of the molecule seems to have little influence on the result, although the organic acid combinations are less toxic. Ammonia compounds taken by the mouth are much less toxic, since the ammonium ions do not enter into the general circulation, because the compounds are broken down into urea by the activities of the liver. Sodium compounds are not very toxic. They are not often called upon in the body metabolism to neutralize the morbid acids forms and thus rarely spare the ammonium compounds. In therapy, however, notably in diabetes mellitus they may be very efficient aids to overcome the effects of acid intoxication. Potassium compounds may be used by the body as neutralizants, but their rôle is not a large nor an important one. They are about one-half as toxic as the ammonium compounds when in combination with the same organic acid. In therapy they are not to be recommended, since they substitute for one poisonous base, ammonium, another, potassium. Little need be said of the calcium and magnesium compounds.

Toxicity of Acid Ion.—So far as the author's results can go, it seems probable that the sulphuric, phosphoric, and nitric acid ions are not markedly toxic, and in combinations with ammonium it is this base which is the poison. Of the organic acids, lactic, sarcolactic, oxybutyric acetic, etc., these are feebly toxic, whereas oxalic acid is comparatively poisonous.

In discussion Dr. C. A. Herter of New York suggested that a refinement in technic which made use of equi-molecular solutions would be advisable and that it was not justifiable at the present time to attribute the toxic action solely to the ammonium compounds.

Tetanus Toxin in Infected Horse.—Drs. B. M. Bolton and Carl Fisch of St. Louis had occasion by reason of the recent St. Louis tragedy to investigate the amounts of tetanus toxin that may be found in the blood of tetanus infected horses. It is known that tetanus toxin may be found in the blood of an infected horse at a particular time and then it disappears very rapidly. In rabbits this is also true, as is the reverse proposition. The rabbit seems to be able to lock up a large amount of tetanus toxin, whereas the guinea-pig can do but little in this line and what little toxin is neutralized is usually made so in the nervous tissues. No toxin was found in the blood or the spinal fluid of any of the poisoned children. In a series of experiments on horses it was demonstrated that tetanus toxin could be found.

Acid Resisting Group of Bacteria.—Drs. A. C. Abbott and N. Gildersleeve of Philadelphia have made a series of studies on the properties of these organisms which seem closely allied to the tubercle bacillus. These micro-organisms have been found in timothy, in butter, in cheese, and in many excretions, but, according to Dr. Abbott, they may be readily differentiated from the tubercle bacillus because of their lessened resistance to the action of the inorganic acids. The tubercle bacillus will stand stronger acids and for a longer period of time without decolorization. Thus, with 5-per-cent. sulphuric acid the tubercle bacillus will resist decolorization for twenty minutes and strong 15-per-cent. nitric acid five minutes, while all of these related bacteria will withstand the former acid for only five or six minutes, and the latter strength of acid but a few seconds. It is further brought out that these bacteria are capable of inducing nodular tumors which in some respects are suggestive of the tubercle of tuberculosis, but no one nodule ever has all the typical characteristics, whereas if every tumor be studied practically every change will be found. Caseation is rare in these experimental tumors. Another point of difference may be noted in that the acid resisting group rarely causes pulmonary lesions, whereas its chief pathological activities are exerted on the kidneys. Furthermore no reaction to tuberculin has ever been obtained in animals infected with members of this group. The authors are disposed to regard these forms, with the tubercle bacillus, as a distinct group, more closely allied to the actinomyces than to other forms of plant life.

In discussion Dr. S. Flexner of Philadelphia pointed out the fact that the histology of the tubercle caused by this group of organisms is quite dissimilar from that brought about by the bacillus tuberculosis. The giant cells resemble those of foreign body giant cells, and the general type of tissue more closely resembles granulation tissue than it does true tubercle tissue.

Cytotoxin Intoxication and its Histology.—Dr. Simon Flexner of Philadelphia referred to the recent work of Bordet, Ehrlich, Metchnikoff, Van Dungern, and others who have shown that many different body cells when injected into the bodies of alien animals give rise within the cells of the alien animal to cytotoxins which resemble in many of their properties and reactions toxins of bacterial and other origins. One of the most interesting features of these cell reactions is that the cytotoxins formed seem to have a specific action on the cells of the same kind from which they were derived. Thus, injected nerve tissues act on nerve tissue; spleen cells on spleen cells, etc. The histological changes induced have never been studied systematically, or, when so studied, complex organs have been the objects of investigation. Dr. Flexner chose the lymph-nodes as the organs for investigation because of their simplicity and the ease with which they might be studied. He has found that for studies of this character the rabbit is very illy suited, since this animal soon succumbs to the cytotoxins formed. The goose has been found to be a much more resistant animal. If the lymph-cells of a rabbit be injected into the goose the lymph-tissues of this latter animal, independent of the site of injection, show a marked hyperplasia and other histological alterations suggestive of the changes induced by the use of a bacterial toxin, such as diphtheria toxin.

Heterolysins and Autolysins.—Dr. Flexner further discussed the theories underlying the formation of these bodies and referred to Ehrlich's work on autolysins, *i. e.*, on certain cytotoxins formed within an organ which acts destructively on that organ itself; in which connection he would seek to show the possibility of the setting up within an organ a vicious circle whereby it continually would cause its own modification. On this hypothesis he would explain, for instance, the various sclerotic processes, such as cirrhosis of the liver, which may follow an acute toxemia of an organ, which, after the original cause of fibrous tissue proliferation has been removed, yet nevertheless goes on with the formation of this disadvantageous new tissue.

Terminal Infections.—Dr. Flexner also spoke of one of the factors which might be of paramount importance in the causation of the overrunning of the body just before death by some one or other type of micro-organism—a terminal infection. He thought it possible that some disturbance might occur in the blood serum whereby the immune body complement might be diminished or altogether absent. Thus, it is known that in animals experimented on with bacillus typhosus or coli, that the blood serum which has lost its immune complement in part or in whole, may regain the same and thus protect the animal, whereas in the terminal infections no such restoration can be brought about.

Study of Bacterial Cells.—Dr. Victor C. Vaughan gave an interesting résumé of a series of researches made in his laboratory during the past two years. He made use of his giant culture beds, twenty square feet of growing surface, and was enabled thereby to cultivate enormous quantities of bacteria. These were dried and their chemical constitution and character more carefully investigated. Dr. Vaughan believes that the formation of toxins in bacteria is a product of internal cell activity, a synthesis, and is not a result of the splitting up of the food on which the organisms grow. The first study reported on was the character of bacterial pigments. These are fatty bodies, lipochromes, similar to higher plant pigments and are capable of making good dyes; he showed some silk handkerchiefs dyed by the pigments of bacillus prodigiosus and bacillus violaceus. He finds that the colon bacillus, anthrax, bacillus diphtheriæ, and the sarcinæ all contain appreciable amounts of toxins. These are easily obtained from his dried powder by hydrolizing with sulphuric acid and then dissolving the toxin out by means of water. Alcohol precipitates the toxins. Dr. Vaughan also spoke of the chemistry of the anthrax bacillus. It contains toxic substances in very appreciable quantities, gm. .050 (gr. 1) of which will kill with all the symptoms of this well-known disease. Most of the bacteria studied contains at least two toxins—some contain more. Some are readily split off from the molecule by acids: others not so at all. Dr. Vaughan also elaborated a new theory of the structure of the molecule and showed its relations to the action of antitoxin.

Effects of Tobacco on the Tissues.—Dr. I. Adler of New York found that it was possible to introduce gradually-increasing amounts of extract of tobacco into the food of rabbits which, while at first causing symptoms of nausea, later were taken without any apparent inconvenience to the animal. He sought by such a method of experimentation to determine if tobacco caused any constant lesions which might lead to interpretations referable to chronic tobacco-poisoning in man. At the end of three weeks one rabbit was killed and the tissues examined. It was, so far as could be determined, normal in all of the organs with the exception possibly of the liver. This organ showed a slight conglomeration of round-cell infiltration about the smaller blood-vessels of the interlobular spaces. At the end of two and one-half months of this feeding it was found that the liver was somewhat larger in size; it was paler, firmer, more granular and somewhat gritty to the knife on sectioning. Throughout there was an increase in the interlobular fibrous tissue, and an increase in the fibrous tissue about the portal veins and bile-ducts. There were no changes in the kidney parenchyma. At the expiration of four months these changes in the liver were more marked. The changes in the blood-vessels began to suggest the lesions of an obliterating endarteritis and, moreover, there were beginning changes in the blood-vessels of the cortex of the kidney. In the heart muscle, slight involvement of the small vessels of the periphery of the heart walls was beginning. The experiments had not progressed beyond this point, but were already showing some interesting analogies on the development of chronic arterial lesions in man.

Hematoporphyrinuria.—Drs. J. Tyson and A. C. Crofton of Philadelphia contributed the details of the history of a patient showing this symptom following the prolonged ingestion of large quantities of sulphonal. Nothing was added to the symptomatology of this form of poisoning. It was determined that at one time in the poisoning at least one-seventeenth of the entire amount of hemoglobin of the body had been destroyed in twenty-four hours.

Pneumococcic Arthritis.—Dr. J. B. Herrick of Chicago said that this complication of pneumonia was comparatively rare. Cave of England had reported the occurrence of some thirty-one instances and Herrick added 21 to this list, making a total of 52. He gave the incidence of the complication as 1 in 1,800 and maintained that trauma was the most probable exciting cause for the location. The arthritis was particularly prone to occur during convalescence, sometimes from one to three days after the crisis; sometimes as late as the fifteenth or twenty-first day. Like gonorrheal arthritis, the pneumococcic form was frequently monarticular and the larger joints, the hip and the knee, were sites of election. Bacterial findings in the joints was the only true method by which to establish the diagnosis. Spontaneous recovery was the rule with the serous effusions, although the prognosis was at all times extremely grave, as there was necessarily a general bacteremia. In those patients in whose joints there were serous effusions only, aspiration was usually sufficient to bring about recovery; in those with purulent joints, surgical opening and drainage was indicated.

Dr. William Osler spoke of three types of these cases, namely, (1) localized arthritis; (2) arthritis associated with pneumonia, and (3) general pneumococcic septicemia. He presented the history of a clinical case.

Pathology of Herpes Labialis in Pneumonia.—Dr. W. T. Howard, Jr., of Cincinnati reported a case of croupous pneumonia, dying on the sixth day of the disease. Three days before death there was marked herpes of the upper lip and of the nose, most marked on the left side. Histological study of the Gasserion ganglia and of their branches showed as follows: In the left ganglion, there was marked congestion of the veins about the superior maxillary nerve and its origin, with hemorrhage into the capsule and into the part of the ganglion nearest this branch. Here, in addition to the hemorrhage there was cellular infiltration and proliferation, with compression, and destruction of some of the ganglion cells. The right ganglion showed congestion of the same veins, without hemorrhage, but with some cellular infiltration of the ganglion tissue near the superior maxillary branch. No degenerations were found in the roots of the fifth nerves or in the superior maxillary nerves. In a second case of croupous pneumonia, three days before death, there was a marked herpes zoster in the sixth dorsal region of the left side. A similar eruption was found on the day of death on the left side of the abdomen in the eleventh dorsal region (Head). Only the lower portion of the cord and the lower spinal root ganglia could be removed at the autopsy. Sections of the left eleventh dorsal ganglion showed both congestion of and hemorrhage into its capsule. At one side of the ganglion the capillaries were congested and a few red blood-cells were present in the interstitial tissue. In one small area there were a few disintegrated ganglion cells with slight round-cell infiltration. In other portions of the ganglion numerous amylaceous and hyaloid bodies were found in lymph-spaces and apparently in ganglion-cell spaces. Degenerations could not be demonstrated either in the nerve, the posterior roots, or in the spinal cord. Histologically the lesions in the skin were identical in the two cases. As the lesions in the ganglion and in the skin in herpes labialis and nasalis, and in herpes zoster of pneumonia, are the same, and as they have the same pathology as ordinary herpes zoster, it seems probable that the various forms of herpes are identical.

Hodgkin's Disease with Recurrent Fever.—Dr. H. F. Vickery of Boston gave a series of notes on a clinical case of this affection. During the febrile period of the disease the glands were swollen and tender, but there were not any indications of a spreading of the glandular involvement. There were no marked blood anomalies. There had been six febrile periods. On examination of some of the glands a mixed-cell sarcoma was found. Dr. Vickery thought that it was not improbable that some specific cause might be found for this disease. He was not yet prepared to believe that tuberculosis was the main underlying lesion.

Dr. M. Allen Starr said that every case of such a rare and obscure affection was worthy of record and presented the history of a case seen with Dr. Kinnicutt. In this patient's history there was family tuberculosis. The glands of the neck had been removed by Dr. Bull and had been found tuberculous. The febrile attacks would extend over a period of from seven to ten days and the febrile intervals would be from ten to forty days. Other glands were removed; these were non-tuberculous. With the febrile attacks there were exhaustion, malaise, nausea and headache. The physical examination was usually negative. There was a slight enlargement of the spleen. The blood-count showed 4,400,000 red cells, 5,800 white cells and no marked abnormal features. So far as could be learned there was no tuberculosis at the time of examination.

Splenic Anemia.—Dr. William Osler of Baltimore said that he had desired to bring out if possible the existence of a distinct type of disease, which might be set apart from any of its congeners by the presence of a distinct and clear-cut syndrome. The symptoms were anemia, of a chloro-anemic type, marked chronicity, extending over many, many years, with distinctly enlarged spleen; hemorrhage from the stomach, at times pigmentation of the skin, and, in the later stages of the disease, the development of an ascites or a cirrhosis. He reported a classical history of a case which would represent the type. With reference to the subject of chronicity he said that the disease might exist during a period of at least ten or twelve years. The longest record was one of twenty years. The spleen might be as large as a leucemic spleen with no increase in the size or number of the general lymphatic tissues. The blood-changes were of the chloro-anemic type. There was a leucopenia with greatly reduced amounts of hemoglobin and with a comparatively normal number of erythrocytes. The hemorrhages were usually into the stomach, occurring sometimes early and sometimes late and again at times in other locations. This hemorrhage seemed to be explained on the ground of the close anatomical relationship of the stomach to the enlarged and engorged spleen. He had noted pigmentation of the skin in seven patients. It was of a peculiar grayish tint suggestive of argyria; sometimes it was mottled. In the later stages of the disease involvement of the liver may occur, with increase or diminution in its size, and with jaundice, and ascites. At the present state of our knowledge these anemias are in an extremely unsatisfactory condition so far as accurate demarcation is concerned. They make a very motley group. They are to be delimited from the pernicious anemias, cirrhosis, syphilis of the liver, Hodgkin's disease, and a number of other conditions. Their treatment is far from satisfactory. Splenectomy has seemed to prove of service for some patients, but not in others.

In the discussion Drs. Musser and Billings reported cases, considering the disease rare. Dr. Cabot gave the results of his experience and was inclined to the belief that no special group, such as Dr. Osler might seek to pick out, really existed as a disease entity. The low relative percentage of hemoglobin had but little significance in his mind. The low white count was peculiar, but was not sufficiently so to be of service in making a type. Dr. Stengel gave the histories of two patients suffering from what has been termed Banti's disease.

Intestinal Parasites and Anemia.—Dr. Wardell Stiles of Washington added to the discussion a number of observations made upon intestinal parasites in cattle and urged the advisability of more frequent and routine fecal examination in all patients suffering from grave anemia. In cattle enlarged spleens associated with anemia are not uncommon, and are due to infection by a number of parasites. The encysted Strongyle, Strongylus contortus and Strongylus (Uncinaria) radiata are among the commoner parasites. Uncinaria is related to Anchylostoma and Uncinariasis, or what was heretofore termed Anchylostomiasis, is by no means a rare disease. Moreover, Dr. Stiles believes that the form of Uncinaria found in this country and in the Philippines is a new species, named by him Uncinaria Americana, and is not the old Uncinaria (Anchylostoma) duodenale of Europe. Therefore, this disease he believes is endemic in this country and has been here for a long time, but unsystematic research, more particularly of the feces, has permitted it to go unrecognized. This disease has been reported in Virginia and in Texas and gives a number of the classical symptoms under discussion in Dr. Osler's paper.

Albumosuria and Pernicious Anemia.—Dr. H. F. Vickery of Boston reported the history of a man, aged forty-seven years, with albumosuria and having the general course of a case of pernicious anemia. There was sudden death by syncope and no autopsy was obtained.

Dr. Jacobi in discussion said that the relationship was probably accidental. Albumosuria in slight grades was not at all uncommon in a large number of conditions, especially if there were purulent discharges.

Acute Hemorrhagic Polyomyositis.—Dr. W. S.

Thayer of Baltimore presented the details of the history of a case of this affection. He gave the varied classifications of this comparatively rare affection dwelling more particularly on that given by Lorenz. The left arm was the site of a large amount of edema and the pectorals of the same side were also affected. In addition there were extensive hemorrhagic infiltrations within the muscles and about the muscles. The varied etiological factors were considered, but the case under consideration was inexplicable.

Sunstroke in Philadelphia.—Drs. M. J. Lewis and F. A. Packard gave an extremely interesting paper on the cases of sunstroke occurring in Philadelphia and treated at the Pennsylvania Hospital during the summer of 1901. In all some ninety-one cases are reported. Most of these patients were stricken between the hours of eleven and five, the maximum number of insolation strokes occurring between the hours of three and five in the afternoon, showing the aiding influence of muscular work added to the heat in bringing about this condition. Of these 91 cases, 31 occurred in females, 60 in males, solely an indication of man's greater exposure. The temperatures recorded ran from 105 to 113° F.; none died with temperatures of 106° F. or less; 8 patients had temperatures of from 106 to 107° F., of whom 2 died; 6 had temperatures of 107 to 108° F., of whom 1 died; 8 had temperatures of 108 to 109° F., 1 died; 2 had temperature of 109 to 110° F., 1 died; 8 had temperatures of 110 to 111° F., 3 died; 3 had temperatures of 111 to 112° F., 3 died; 1 had a temperature of 113° F., he died. Many of the patients had tonic convulsive seizures. These were quite distinct from the attack of epilepsy or of uremia; fourteen patients had such attacks, and in all the temperature was 106° F. or over. Unconsciousness was universal if the temperature exceeded 106° F. The state of the pupils varied; in 5 they were contracted; in 2 with temperatures of 110° F., they were dilated. In 4 albumin was found in the urine. The previous habits of the patient with reference to alcohol seemed to play an important rôle; 50 per cent. of those with alcoholic habit died; yet 50 per cent. died in whom no such history was obtainable. The blood of 17 patients was examined and showed no regular features. In general there was a slight increase in the red cells; the leucocytes varied widely, an increase in the polymorphonuclear cells alone being noted.

Treatment of Sunstroke.—In patients with a temperature of 102° F. or under, little or no treatment was necessary. In those with temperatures of 102 to 106° F., stimulation, the ice-cap, and rubbing with ice were necessary. In the higher grades of temperature additional agents were tried. Bleeding did not seem to offer much relief for those with the higher grades of temperature, yet no harm could be said to have followed this procedure. Hypodermoclysis of physiological salt solution was found to be too slow. Intravenous injections were tried in 10 cases, of which 4 died. No accurate data could be obtained, but the impression was gained that such a procedure never did any harm and probably did some good. Saline solutions intravenously, rubbing with ice and stimulation were advised as the best routine for high temperatures.

Gelatin as a Hemostatic.—Drs. A. Stengel and D. L. Edsall of Philadelphia presented the results of a series of clinical and experimental studies on gelatin as a hemostatic in bleeding, in typhoid fever, 12 cases; from gastric ulcer, 3 cases, and in phthisical hemoptysis, 4 cases. The authors could not come to any definite conclusions from their studies, but the impression was gained that, notwithstanding certain grave objections to the method, it was justifiable and to be recommended. In attempting to explain why such a good result could reasonably be hoped for they considered, first, the increase of calcium that might be added to the blood, which substance, taken into the blood, is known to bring about increased powers of coagulability. They thought that this element might be considered of minor import. Agglutination of the red cells by the gelatin was considered, but was rejected. Slowing the blood current also seemed untenable as an explanation. Increased acidity of the blood is not a factor. The results, if obtained, are probably due to a combination of the various factors rather than to any one.

Dangers in Gelatin Injections.—Certain grave objections were considered. At times emboli might form in the smaller vessels; these, becoming infected, not infrequently break down and form abscesses. Injury to the kidneys may result from the excretion of the gelatin. Pulmonary edema may be induced. It is not uncommon in animal experimentation. Pain is usually an accompaniment of these injections.

In the discussion the consensus of opinion did not seem to favor the procedure highly.

Hemolymphglands.—Dr. Simon Flexner read a paper on this subject for Dr. A. S. Warthin of Ann Arbor. These are small glands of a redder color than ordinary glands, generally very small and difficult to find in the human body after death as the blood drains out. The sinuses of these glands are filled with blood instead of with lymph. They bear the relation to ordinary glands of 1 to 5 or 10. Dr. Warthin has made an exhaustive study of their histology, especially in animals. They can be separated into two kinds—those having the spleen and marrow respectively as their prototype. These two forms were very plainly shown by slides. Between the two are all grades of transition. Small lymph-nodes are also contained in these glands, as in ordinary lymph glands. Dr. Warthin believes that under normal conditions these glands have nothing to do with blood-formation. In diseased conditions they are supposed to be active, possibly acting vicariously for the spleen or bone marrow.

Dr. Bond showed slides of blood containing mitotic corpuscles.

Anguilulla Aceti.—Dr. Billings reported two cases of anguilulla aceti in the urine and showed slides. Dr. Stiles reported one case. The presence of these parasites in the urine is difficult of explanation. The old Eastern custom of using vaginal douches of vinegar to prevent conception was mentioned as a possible source, transmission to the male occurring during coitus.

Origin of Vaccine Bodies.—Dr. Ewing showed slides to demonstrate his theory of the origin of vaccine bodies, the question being suggested by the fact that the number of vaccine bodies present has much to do with the degree of hemorrhagic smallpox. In cases of this variety red cells in various stages of degeneration were found enclosed in epithelial cells, many of these fragments being scarcely distinguishable from vaccine bodies. The relation of red cells and vaccine bodies in cases of ordinary variola was then studied and practically the same conclusion was reached, viz., that vaccine bodies are not parasitic in nature, but are fragments of red blood-cells. Contrary to some other observers

Ewing believes the fate of the vaccine bodies to be disintegration instead of vacuolization.

SECOND DAY—APRIL 30TH.

Prognosis of Pleurisy with Effusion.—Dr. R. C. Cabot of Boston sought to reinvestigate this question, since it has been held for so many years that so-called idiopathic pleurisy with effusion was almost always tuberculous. During the past twenty years 300 cases of pleurisy with effusion have been entered in the books of the Massachusetts General Hospital. Of these Dr. Cabot was able to obtain subsequent histories in 152 cases. In all of these at the time of entrance into the hospital the diagnosis was certain, since they had been tapped and in none was a diagnosis of tuberculosis thought possible after careful physical examination. The results showed that 21 patients were in sound health after from fifteen to twenty-one years, after from ten to fifteen years, 23 patients, and after five to ten years, 36 patients, or a total of 80 patients in sound health. Of those not out so long as five years, there were 4 in good health after four years, 7 after three years and 6 after two years. Those known to have contracted tuberculosis and died were 23 in number, one sixteen years later, 4 ten to fifteen years, 8 five to ten years, 10 one to five years. Fourteen died of other diseases. Thus, more than 80 per cent. were in good health after the pleurisy. Fifteen per cent. developed tuberculosis of the lung, but only 3 per cent. of these did so within two years, hence it does not seem probable that the relation between the pleurisy and the tuberculosis is a very immediate one. The type of tuberculosis observed is of the mild type, the progress of the disease being a slow one. Six of the patients with tuberculosis are still alive. However, a very rapid and fatal form of the disease may occasionally arise.

Influence of Family History.—This does not play an all-absorbing rôle, although 25 per cent. only of those in health had a family history of tuberculosis while two-thirds of those who died had some family tuberculous taint. The family history plays an important part in the prognosis therefore. The character of the physical signs is of little service in prognosis. Recurrence of the pleurisy was not of common occurrence; reaccumulation of the fluid was also rare. Dr. Cabot would thus reverse the old bad prognostic omens of pleurisy with effusion and give a hopeful prognosis if there be no family history of tuberculosis.

English Statistics not as Favorable.—Dr. A. Harris of Manchester, England, said that for the English population the prognosis was by no means as favorable. This opinion was reflected in the decisions of the English life insurance tables where signs of an old pleurisy or history of the same made the applicant pay a higher rate or excluded him entirely if he had had a pleurisy within five years of the time of application.

Dr. Jacobi said that there were many old pleurisies which were recovered from, and he was of the impression that Dr. Cabot's results were in accord with his views.

Bacteriology of Empyema.—Dr. C. F. Withington of Boston gave a lengthy paper on the forms of bacteria found in patients with empyema in some 135 cases occurring during the past six years. Of these 71 were left-sided and 64 right-sided. The diplococcus lanceolatus was found in 28 patients, of whom 8 died; the streptococcus was found in 35 patients, of whom 9 died; a mixed infection of these two organisms occurred in 18 patients, of whom 2 died. Thus the infection by either the streptococcus or the diplococcus was more serious than by their admixture. In the great majority of cases pneumonia is an antecedent of the empyema and lobar pneumonia is the main type of the disease. Pus was detected in 95 per cent. of all the cases before the twenty-fifth day, sometimes as early as the sixth day. Many pneumonias were secondary.

Treatment and Results.—Of 20 patients unoperated on 10 recovered and 10 died; of 115 operated on only 40 died, thus making a percentage of 50, as against 29 in favor of the operative treatment of the disease. Of those who died, 26 per cent. had the streptococcus as a cause of the empyema; 11 per cent. died with the mixed infection, and 28 per cent. died from infection by the diplococcus. The prognostic feature of the type of infection is of secondary value, yet some importance should be attached to the purer infections. Thorough opening of the chest usually gives better results than does simple drainage.

Dr. Welch spoke of the difficulties of differentiating these two different forms of micro-organisms, and Dr. Osler spoke of the clinical fact that it seemed that empyema following pneumonia was a more frequent sequel in these later days. What rôle the influenza bacillus played in this it was easier to surmise than to know.

Spontaneous Non-tuberculous Pneumothorax.—Drs. M. H. Fussell and David Riesman considered this comparatively rare accident, giving an analysis of the fifty-six cases which they had been able to find in literature. This affection may occur in good health, although it has always been assumed that a tuberculous lung was a prerequisite. Only 2 per cent. of the cases have occurred in females and most of those in the male sex have been in young adults. The affection very frequently follows severe muscular effort, the symptoms come on with great suddenness, persist for a short time and spontaneously disappear or are immediately dissipated by tapping. One case is reported in literature to have persisted nine years. At times the symptoms may be so slight that the patient goes about his daily work without any inconvenience. There may be a slight dyspnea which at first is apt to be very urgent. On lying down, however, this dyspnea usually disappears. Fever is a rare sign. Inspection usually finds a dislocated apex beat. The coin sound may or may not be in evidence. Metallic tinkling is not a necessary sign of fluid. Aspiration usually relieves immediately and recovery goes on normally.

Drs. Kinnicutt, Solis Cohen, Shattuck, Janeway, Peabody, Brannan and Osler discussed this subject.

Pernicious Anemia Associated with Pulsation.—Dr. A. R. Edwards of Chicago gave the history of an unique case of marked pulsation in the region of the left chest and upper abdominal segment which was mistaken for a case of aneurism, but which gave on autopsy only the signs of an enlarged and adherent spleen and signs of pernicious anemia. No cause was elicited to account for the peculiar swelling pulsation. Dr. La Fleur of Montreal reported a similar experience which he had had.

Healed Ulcerative Endocarditis.—Dr. J. B. Herrick of Chicago said that contrary to old dicta malignant endocarditides sometimes do recover. On grounds of good logic he believes this ought to be so; for (1) there is no reason why such a lesion should not behave like other infections in the body due to the same micro-organisms, and these are known to heal; (2) clinical observation shows that they do heal; while many of the cases on record are not conclusive on this point, yet certain credence must be given to the belief of careful observers who have seen such cases the world over; (3) there is anatomical proof in old autopsy cases that have recovered from their old endocarditis and have died of other disease. These show the typical heart lesions. Dr. Herrick then gave a brief résumé of the history of a case and laid stress on tonic treatment, advising iron and arsenic and in the acute stages antitoxic serums and perhaps the use of the colloidal-silver preparations, as advocated by Credé.

Heart in Pregnancy.—Drs. Alfred Stengel and W. B. Stanton of Philadelphia controvert the old French notion that the heart becomes hypertrophied during pregnancy. By a series of carefully devised tracings and readings of instruments devised for the measurement of blood-pressure, they show that Gerhardt's idea that the growth of the fetus, by pressing up the diaphragm forces the apex of the heart upward and outward and that this dislocation has been misinterpreted as a sign of hypertrophy. The tracings in twenty-six cases with careful measurements shows this dislocation, which disappears after parturition. There is, however, a slight irregularity in the contour of the upper right margin of the heart indicative of a slight hypertrophy of the right conus arteriosus. The murmurs which are heard in primiparæ are probably the result of a slight overaction of the right heart. No constant changes in blood-pressure could be demonstrated.

Pancreatic Lithiasis.—Dr. F. P. Kinnicutt of New York gave a report on six cases of pancreatic lithiasis, one of which occurred under his own observation and was recognized during life. This case occurred in a woman, forty-two years of age. The first symptoms were noted in 1888. There was sudden acute pain in the back between the shoulder-blades which moved forward through the body, not around it and lodged in the epigastric region, some nausea and vomiting occurred. There was a severe diarrhea lasting eight or nine hours. Other attacks occurred in 1897 and in 1898. There was neither jaundice nor the passage of calculi. In 1900 she had another attack, with practically the same symptomatology, and six small stones were obtained. These were found to consist of carbonate and phosphate of lime. In so far as the diagnosis of this condition is in question, the symptoms are not clear. Pain is usually present and localized, but a differentiation from biliary colic is not possible. The finding of characteristic calculi is naturally conclusive. Sugar may or may not be found in the urine. If the pancreas be diseased sugar is more liable to be present, but if there be simple obstruction reducing substances are absent in the urine. If there be diminished flow of pancreatic secretions the normal splitting of fats into fatty acids and soaps is interfered with and the presence of unmodified fats and the absence of these acids and soaps makes an important diagnostic feature. Jaundice may be present if the calculi engage so as to press against the biliary ducts and is purely accidental.

Vasomotor Ataxia.—Dr. S. Solis Cohen of Philadelphia referred to his previous writings upon this subject and the recent observations of Savill. Attention was called to the condition of essential instability of the controlling (or taxic) apparatus of the vasomotor nervous system as a large factor in the defective reaction of the individual toward environmental changes, so that persons of the type described exhibit upon slight excitation physical, chemical or psychical, certain phenomena which in other persons require causes of greater moment. These phenomena depend upon irregular and sometimes widely distributed contractions and dilatations of the capillaries and the smaller blood-vessels, and may be divided into three classes: (1) Those dependent upon excessive relaxation or paresis of the vessels, often with concomitant impairment of cardiac inhibition; (2) those dependent upon excessive constriction of vessels, usually with disturbance of cardiac inhibition, also, but sometimes without definite cardiac phenomena clinically demonstrable; (3) those in which phenomena of the two opposite groups are commingled. The third group is the more common. Graves' disease presents an extreme type of the phenomena of excessive vascular relaxation with paresis of cardiac inhibition. Its exciting causes are various, and its toxicopathologic mechanism undetermined. Raynaud's disease presents an excessive type of vascular constriction, and of it the same may be said concerning undetermined exciting causes and toxicopathological mechanism. Between these two extremes are many varieties differing much in severity and locality of symptoms: simple urticaria; angioneurotic edema; migraine of the spastic type and migraine of the paretic type; anomalous eruptions of various kinds; drug idiosyncracies; hay-fever; tendencies to hemorrhages from various organs; minute cutaneous angiomata; paroxysmal tachycardia, and other more or less closely related phenomena. As definite exciting causes and definite toxicopathological mechanisms are determined, definite nosologic groups may be separated and certain syndromes like those of Graves and of Raynaud made into diagnostic entities. Over and above these remain many vague and ill-defined conditions arising in response to any one of a number of different stimuli, among which temperature, weather, endogenous and ectogenous toxins, and emotion are most prominent. Hysteria, neurasthenia and epilepsy bear close but as yet undetermined relations to the condition, which may be predominant or apparently insignificant in their semeiology. The symptoms of the menopause are essentially vasomotor ataxic in character, but are a transient phase in the devolution of the female. Essential vasomotor ataxia is usually a congenital condition affecting, in different ways, several members of one family. At times it seems to be acquired in sequence to disease or accident.

In discussion Dr. Morton Prince of Boston spoke of these as perversions of physiological activity which in neurotic individuals became a fixed habit of the nervous system. Dr. B. Sachs of New York was inclined to regard these diseases from the mechanical rather than from the psychical standpoint. Graves' disease depended, he thought, upon modifications in the thyroid gland; Raynaud's disease and erythryomelalgia were dependent upon strictly structural changes in the walls of the blood-vessels.

Ulcer of the Duodenum.—Dr. Henry Jackson discussed the features of duodenal ulcer and its consequent hemorrhage from the standpoint of differential diagnosis between duodenal and gastric ulcer. It is impossible at the present time to differentiate between these two conditions. Duodenal ulcer is more liable to cause hemorrhage and bloody stools may be more prevalent than bloody vomitus in this condition. Hemorrhage secondary to cirrhosis of the liver is often very closely simulated. In the treatment saline solution offers the best means at hand at the present time.

Dr. W. H. Thomson in discussion spoke of the greater prevalence of duodenal ulcer in men and the preponderance of gastric ulcers in women.

Hematemesis is not a distinguishing feature, but the symptoms in duodenal ulcer are not so often referred to the stomach. Dr. Janeway has noted in two cases of duodenal ulcer that there was marked dilatation of the stomach with stenosis of the pylorus, and he offers this as a possible diagnostic feature.

Prognosis and Treatment of Tuberculous Peritonitis.—Dr. F. C. Shattuck of Boston spoke of the accidental discovery by McDowell that opening of the abdominal cavity in tuberculous peritonitis often had a salutory effect on the progress of the disease. In order to obtain more definite notions concerning this belief, recently questioned by numerous writers, he has analyzed the statistics of the Massachusetts General Hospital from 1889-1900. In all 98 cases have been recorded, the subsequent histories of 59 of which Dr. Shattuck was enabled to follow. The prognosis was good in about one-half of all his cases. Twenty-eight cases were living at the present time, having been under observation for from two to eleven years.

Treatment.—Some patients get well under medical treatment alone, tapping and improved hygienic surroundings, but surgical intervention had given better results. Thus, of the cases treated medically at least two-thirds died, whereas of the cases treated surgically, opening, removal of fluid, removal of localized masses, etc., two-thirds recovered. Dr. Shattuck concluded that medical treatment was justifiable for from four to six weeks, but if after that time, under favorable hygienic surroundings and may be tapping, no improvement was noted, surgical intervention was imperative. Supportive and climatic treatment is called for in all stages of the disease independent of the mode of treatment.

Dr. J. W. Brannan stated that the experience at Bellevue Hospital supported the statistics given by Dr. Shattuck.

Dr. Billings said that there was need for greater differentiation of the anatomical types of the disease. Simple exudative forms with serous infiltration and localized tuberculous foci were of those that gave the best results in treatment, especially medical. Whereas if there were infiltrating masses with varying type of exudate or if there were nodular deposits and fibrous adhesions the prognosis he thought grave.

Dr. Halsted of Baltimore felt that Dr. Shattuck had outlined the situation much as he saw it in his hospital work. Tuberculin, he believed, was a very necessary adjunct in diagnosis and he would not like to relinquish the diagnostic aid given by its use.

Dr. Jacobi mentioned the results of his experience that many patients with tuberculous peritonitis recovered, but were less liable to do so if there was any general extension of the process to other organs.

Dr. Shattuck in closing demolished Dr. Billings' contention by his statistics.

Pathology of Smallpox.—Dr. James Ewing of New York spoke of four distinct pathological states in this disease, the primary hemorrhagic, secondary hemorrhagic, confluent and conglomerate, and the discrete types. He found the variolous eruption very prevalent in the mouth, fauces, larynx, trachea and bronchi; less on the mucous membranes of the genito-urinary tract. Diphtheritic-like inflammations were very common in the respiratory tract and the variolous poison seemed to act upon this mucous membrane earlier than upon the skin. Acute ulcerative endocarditis might occur; acute kidney degeneration was present in the primary hemorrhagic forms and in the severer grades variolous eruptions and diphtheritic necroses were present in the stomach. Enterocolitis was not uncommon and there was lymphatic hyperplasia.

Bacteriology of Smallpox.—Dr. Ewing found a streptococcus in practically all of the cases under investigation, twenty-nine in number. This, while it might be a secondary infecting organism, was not thought probable by the author. The possibility of a symbiotic relationship between this streptococcus and some factor as yet unknown was suggested. At all events, he thought that the acute fulminant types of the disease were regularly attended by this streptococcus and that it was a necessary factor in the production of this form. A constant blood-change was a great increase in the large mononuclear leucocytes.

Dr. Councilman of Boston reported on researches in the recent epidemic. He could not accept the streptococcus as of primary importance, but held that the smallpox virus, whatever it was, had the property of so reducing the resistance of the body that the streptococcus readily became engrafted on the original process. It is therefore a secondary infection. The destruction of the polynuclear neutrophiles is a constant feature of the disease. This comes about because of the invasion of the medulla of the long bones. The large mononuclear leucocytes are produced in the spleen. Great interest centers about the bodies in the epithelial cells. Dr. Councilman does not believe them to be red blood-cells, nor yet any of the known products of cell degenerations, if they be protozoa they are of a type as yet not analogous to any known forms of these low animals.

Vaccine Virus.—Dr. W. H. Park of New York spoke of some recent work on the transference of smallpox to calves, monkeys and other animals and made some contributions to the knowledge of vaccine. Transference of smallpox material to three calves gave no results; to two monkeys, smallpox eruptions were found on the sixth day; a calf was vaccinated from the monkey vesicles and in six days showed typical discrete eruptions. Filtering vaccine does not seem to destroy its power.

Differentiation of Chickenpox.—The monkey has been shown to be non-susceptable to chickenpox and it is suggested by Dr. Park that this animal be employed to clear up important questionable cases of this disease.

Osteitis Deformans.—Dr. Morton Prince gave an excellent and extensive paper bearing on this rare condition. The main contention of the paper was that these hypertrophies and irregularities in growth of bony structures leading to manifold deformities have a like pathological basis and that the causation is some lesion of the central nervous system in the neighborhood of the trophic centers of bony structure.

Cirrhosis of Liver.—Drs. G. G. Sears and Frank Billings read papers bearing on the pathology and clinical histories of cases of cirrhosis of the liver. Dr. Billings showed that cirrhosis might result in the nonalcoholic, occurring in 20 per cent. of his cases. The most frequent early symptoms were morning nausea and vomiting, catarrhal gastritis and fermentative dyspepsia. In 65 per cent. of his cases there were digestive disturbances. Constipation was prevalent, while a few had diarrhea. Hemorrhoids were not necessarily an early symptom. Muscular rheumatisms were common, lumbago and bachache and neurastheniacal phenomena.

Treatment.—Old-fashioned saline aperients and hot water in the morning were advised. Mist. rhei et sodæ and hydrochloric acid were prescribed. Occasionally muriate of ammonia in ten-grain doses. The saline purge and good hygiene were considered the most serviceable treatment.

Experimental Glycosuria.—Dr. C. A. Herter of New York read one of the most suggestive papers of the session. A complete abstract will appear in our issue of the MEDICAL NEWS for May 10. In brief he pointed out that many and probably most forms of glyclosuria and diabetes are due to the action of substances or conditions which interefere with normal oxidations in the cells of the pancreas. This generalization has been reached from a study of the glyclosuria which follows the application of adrenalin chloride to the cells of the pancreas. When this substance is administered to animals under conditions that require its contact in unaltered form with the cells of the pancreas there results a glyclosuria of a transitory character, associated with a slight or considerable increase in the glucose of the blood. This experimental glyclosuria is most pronounced when the adrenalin is painted on the pancreas and it can be shown that when similar applications are made to other organs, as the liver and spleen, there is either no glyclosura or this is slight in degree. Experiments have been devised and executed which show that whenever adrenalin chloride, which is a powerful reducing agent, undergoes oxidation it is deprived both of its blood-pressure raising action and of its ability to cause glyclosuria. This fact suggests that the glyclosuria following the use of adrenalin is intimately conected with its reducing action upon the cells of the pancreas. Extended experimental inquiry brought to light the striking fact that substances possessing strong reducing power are capable of inducing glyclosuria when applied to the pancreas directly. Thus the sulphurous acid, ammonium sulphide, carbon monoxide, benzyl alcohol, hydroxlamine, pyridine and piperidine are all capable of inducing a considerable glyclosuria, whereas sodium chloride, chlorine water, bromine water, sodium hydroxide, hypochloric acid and ammonia alum, applied under similar conditions, have either no effect at all in producing glyclosuria or cause only the most insignificant excretion of glucose. An observation of great interest is that potassium cyanide in small doses causes glyclosuria, when applied to the pancreas, but not when introduced elsewhere. Since this poison deprives cells of their capacity to take up oxygen, its ability to induce glyclosuria is a strong corroboration of the view here presented of the nature of glyclosuria from reducing agents.

The Following Officers were Elected.—President, James Stewart; Vice-President, W. T. Councilman; Secretary, Henry Hun; Treasurer, J. P. Crozer Griffith; Recorder, S. Solis Cohen; Councillors, Charles G. Stockton and Walter Reed.

BOOK REVIEWS.

A Reference Handbook of the Medical Sciences. Edited by Albert H. Buck, M.D. Vol. III. Cbl., Equ. William Wood and Company, New York.

To pick out the many excellent features of this new edition would occupy more space than we can command. The early volumes but whetted the appetite for more and in this, the third, volume the many excellencies of the former numbers are but increased.

We believe that, with such a set of volumes as this on the physician's shelves, we would have the latest and most authoratative work on almost every subject germane to practical medicine.

The Accessory Sinuses of the Nose. Their Surgical Anatomy and the Diagnosis and Treatment of their Inflammatory Affections. By A. Logan Turner, M.D. (Edin.), F.R.C.S. Ed., Surgeon for Diseases of the Ear and Throat, Deaconess Hospital, Edinburgh. Longmans, Green & Co., New York.

Considering the comparative freshness of the subject, the interest associated with its study and investigation and the increasing frequency with which we are brought face to face with its pathological relations, the opportunity enjoyed by the author of this work has been exceptional. Unfortunately, a careful reading of the book is attended with some disappointment, for, while the work is well done and fairly comprehensive, there is little in it which could in any sense be called "new." The great frequency with which sinus disease is encountered in practice, the lack of general knowledge of the anatomy of the parts affected, as well as of the refinements of treatment required under diseased conditions, make it necessary that general knowledge concerning it should be distributed as widely as possible.

The clearness and excellence of many of the illustrations and the descriptions of them will prove highly instructive to all readers. The chapters relating to Pathology and Treatment are only fairly comprehensive. Without question, the book will serve a useful purpose, but much more could have been made of it.

There are several features in connection with the work which are peculiar. While the evident intention of the writer has been to deal with the subject largely from the point of view of his own observations, too much has been done in this field by other investigators to make it possible to ignore entirely their work. We think that the book would have been strengthened if greater attention had been paid to the work of others; for instance, it would seem fair to expect abundant reference to the contributions of Zuckerkandl. We find, however, but one slight and unimportant reference to him, while the work of Bryan, of Washington, D. C., one of the most original and fertile of modern investigators, is not so much as mentioned. Contributions from many other American sources are too valuable to be ignored, especially in a work which has been placed directly upon the American market. It is to be hoped that the author will ere long prepare a revised edition of this monograph which will be more elaborate, especially in the department of treatment, and will better represent the actual progress made in the last ten years in this important field.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc.; Assisted by H. R. M. Landis, M.D., Assistant Physician to the Out-Patient Department, Jefferson College Hospital. Volume IV., December. 1901. Diseases of Digestive Tract and Allied Organs, Liver, Pancreas, and Peritoneum; Genito-Urinary Diseases; Anesthetics; Fractures, Dislocations, Amputations; Surgery of the Extremities, and Orthopedics; Diseases of the Kidneys; Physiology; Hygiene; Practical Therapeutic Referendum. Lea Brothers & Co., Philadelphia and New York, 1901.

This volume of "Progressive Medicine" continues the interest of former numbers. Dr. Max Einhorn's review of diseases of the digestive tract is especially suggestive. With regard to sedatives in gastric affections, there is a quotation from some of Riegel's work on the action of morphine and atropine on gastric secretion that is of special practical value. According to Riegel's investigation morphine increases gastric secretion while atropine lessens it. It appears rational, therefore, to administer atropine in painful gastric affections accompanied by an excess of hydrochloric acid and rather to avoid the use of morphine. There is a citation from a recent work which shows that though mucomembranous colitis is probably due to a disturbance of the secretory functions of the nerves superintending the bowels, or, at least, that this is always an underlying cause of the affection, local treatment by means of flushings of the bowel with hot water is extremely useful.

The review of the action of glandular extracts is also a very suggestive chapter of the book. Other portions of the department devoted to physiology, of special interest to those interested in neurology, are found under the subheads "Reflex Anuria," "The Effect of Limited Nerve Compression," "The Fundamental Properties of Nerves under the Influence of Certain Poisons," "The Physiology of Nerve Inhibition Phenomena," "The Physiological Significance of the Hippocampus Major" and "The Action of Ether and Chloroform on the Neurons of Rabbits and Dogs."

THE USE OF THE RÖNTGEN RAY by the Medical Department of the United States Army in the War with Spain. 1898. Prepared under the Direction of Surgeon-General George M. Sternberg, United States Army, by W. C. BORDEN, Captain and Assistant Surgeon, U. S. A. Government Printing Office, Washington, 1900.

IN the American Civil War the mortality was nearly double that of the Spanish-American War. A series of valuable tables in this admirable publication present graphically the answer to the question that naturally arises as to whether this difference be due to the use of the small-caliber rifle or to modern surgical methods. It shows that mortality from the wounds of the head, face, neck, spine and abdomen did not materially differ in the two wars. In chest wounds and also in wounds of the extremities there is seen to be only a little more than one-third the mortality that attended similar lesions in the war between the States.

The apparatus used was both of the coil and static type. Inasmuch as dynamos were rarely available, the current in the first case had to be obtained from primary or secondary batteries—of the two, the static was the more practical.

Other interesting conclusions are reached on the question as to where the apparatus should be best placed, in field or in general hospitals and hospital ships. Because lodged bullets rarely require immediate removal; because field hospitals cannot be made so aseptic as general hospitals, and for other reasons, it seems much wiser to restrict the use of this diagnostic aid of the more stable buildings.

The reports are remarkably well presented in clear, concise form, the illustrations are made from most beautiful Röntgen plates and the printing by the Heliotype Printing Company of Boston combines clearness with a beautiful softness which is quite unusual.

THE PRACTICAL MEDICINE SERIES OF YEAR-BOOKS. Volume IV. GYNECOLOGY. Edited by EMILIUS C. DUDLEY, A.M., Professor of Gynecology Northwestern University Medical School; Gynecologist to St. Luke's and Wesley Hospitals, Chicago. With collaborations of WILLIAM HEALY, A.B., M.D. The Year-Book Publishers, Chicago.

No attempt has been made in this little volume to go into the minute details of all the work that has been done in this line during the last year; but the editor has endeavored to give the busy practitioner a brief résumé of the more important research and operative work that has been accomplished in gynecology. In this, Dr. Dudley has succeeded. After quoting from the various periodicals, there are bracketed notes by the editor commenting upon the article when such are practical. The illustrations are copious, are taken from the original articles, and add not a little to the value of the publication.

ENZYMES AND THEIR APPLICATIONS. By Dr. JEAN EFFRONT, Director in the new University in Brussels and Director of the Fermentation Institute. English Translation by SAMUEL C. PRESCOTT, S.B. Vol. I. The Enzymes of the Carbohydrates. The Oxidases. John Wiley & Sons, New York.

IT is only within comparatively recent times that a riper acquaintance with the problems of fermentation has made it possible to publish such a work as the present one. Viewed from an economic point alone this work is of incalculable value to all those workers in the technical industries concerning brewing, the making of wines, etc. From a broader standpoint, however, the volume is one for the chemist, the biologist, and the research-worker in medicine.

CONTRIBUTIONS TO PRACTICAL MEDICINE. By SIR JAMES SAWYER, Knt., Senior Consulting Physician to the Queen's Hospital, Birmingham, England. Third Edition, Revised and Enlarged. Cornish Brothers, Birmingham.

COLLECTIONS of essays on subjects connected with medicine usually have no very extensive sale. The fact that Sir James Sawyer's book has reached its third edition is a proof therefore that it must contain some very interestingly practical materials. The present volume contains some additional chapters and an amount of new material is added to old chapters. Some of the essays are typical studies in the best English clinical vein and English physicians are probably the most practical in the world in important subjects. The discussion, for instance, of the cure of insomnia contains more excellent hints than we have ever seen gathered together on this subject. The cure of habitual constipation is another subject that is treated very, very well. There are besides hints as to the cure of gastralgia, on the treatment of hemorrhoids, the cure of eczema and of other affections, that, while not serious, are often the bane of the patient's and of the physician's existence.

BOOKS RECEIVED.

The MEDICAL NEWS *acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the* MEDICAL NEWS *will shortly appear.*

A PRACTICAL MANUAL OF INSANITY. By Drs. D. R. BROWER and H. M. BANNISTER. 8vo, 426 pages. Illustrated. W. B. Saunders & Company, Philadelphia and London.

THE PRACTICAL MEDICINE SERIES OF YEAR-BOOKS. Vol. IV. Gynecology. Edited by Dr. E. C. DUDLEY. The Year-Book Publishers, Chicago.

THE TREATMENT OF NEURASTHENIA. By Drs. A. PROUST and G. BALLET. Translated by P. O. Smith. Henry Kimpton, London.

LES FONCTIONS HEPATIQUES. Par MM. A. GILBERT et P. CARNOT. 12mo, 287 pages. Illustrated. C. Naud, Paris.

SEVENTEENTH ANNUAL REPORT OF THE BUREAU OF ANIMAL INDUSTRY FOR THE YEAR 1900.

DISEASES OF WOMEN. By Dr. F. H. DAVENPORT. Fourth Edition. 12mo, 404 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York.

TEXT-BOOK OF ANATOMY AND PHYSIOLOGY FOR NURSES. By DIANA C. KIMBER. 8vo, 265 pages. Illustrated. The Macmillan Company, New York.

THE DRUG HABITS AND THEIR TREATMENT. By Dr. T. D. CROTHERS. 12mo, 100 pages. G. P. Engelhard & Company, Chicago.

A HAND-BOOK OF APPENDICITIS. By Dr. A. J. OCHSNER. 12mo, 176 pages. G. P. Engelhard & Company.

CONTRIBUTIONS TO PRACTICAL MEDICINE. By Dr. J. SAWYER. 12mo, 209 pages. Third Edition. Cornish Brothers, Birmingham.

THE MEDICAL NEWS.
A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. 80. NEW YORK, SATURDAY, MAY 10, 1902. NO. 19.

SPECIAL ARTICLE.

ON ADRENALIN GLYCOSURIA AND ALLIED FORMS OF GLYCOSURIA DUE TO THE ACTION OF REDUCING SUBSTANCES AND OTHER POISONS ON THE CELLS OF THE PANCREAS.[1]

BY C. A. HERTER, M.D.,
OF NEW YORK;
PROFESSOR OF PATHOLOGICAL CHEMISTRY, UNIVERSITY AND BELLEVUE MEDICAL COLLEGE; VISITING PHYSICIAN, CITY HOSPITAL, NEW YORK.

THIS publication is made for the purpose of giving a condensed account of a recent experimental research on glycosuria due to the action of reducing substances and other poisons on the cells of the pancreas. In collaboration with Dr. A. J. Wakeman a detailed account of this work will before long be presented in the *Journal of Experimental Medicine.*

The starting point in this study of glycosuria is the observation that adrenalin chloride when introduced into the peritoneal cavity of dogs is almost regularly followed by the appearance of considerable quantities of sugar in the urine.[2]

Preparation and Chemical Characters of Adrenalin Chloride.—Of the method of preparing adrenalin chloride little need be said here as this subject has recently been discussed by Takamine.[3] One point should, however, be noted. In the course of preparing adrenalin the finely disintegrated suprarenal glands are steeped in water for about five hours at a temperature varying from 50 to 80 degrees C. and later are exposed to 90-95 degrees C. for one hour. This temperature is sufficiently high to destroy most, if not all, diastatic ferments. The adrenalin chloride, in concentration of 1-1000, of commerce shows a slightly alkaline reaction on moist litmus paper and with phenolphthalein. The colorless aqueous solution absorbs oxygen from the air and changes to pink and later to red or brown. The energetic reducing action of the solution is shown by its behavior to many salts. One cubic centimeter of 1-1000 aqueous solution of adrenalin chloride reduced .042 c.c. of Fehling's solution and 100 c.c. of the solution were thus equivalent to 0.21 gm. glucose. Adrenalin chloride reduces potassium permanganate in the cold and Dr. Wakeman has calculated that the weight of oxygen which is taken up from this salt during the reduction of 1 c.c. of the commercial solution of adrenalin is 0.000313 gm.[4]

The commercial aqueous solution of adrenalin 1-1000 was employed in the research to be described. A few observations were made with adrenalin prepared by a somewhat different method by Dr. John J. Abel, who kindly placed some of his product at our disposal. One portion of the adrenalin given us by Dr. Abel is free from loose ammonia and differs in some of its reactions from the adrenalin of commerce, but its physiological effects are essentially the same.

There are many conditions which affect the degree and duration of adrenalin glycosuria and some of these must be mentioned.

Mode of Administration.—Subcutaneous injections of adrenalin chloride yield only slight degrees of glycosuria. Thus in a typical instance, a dog of 15 kilos received 10 c.c. adrenalin under the skin. Before the injection, the urine contained 0.48 per cent. reducing substance (Pavy's method). The first collection after injection contained 0.66 per cent. reducing substance, the second 0.52 per cent. reducing substance. The explanation of the small excretion of sugar is that the adrenalin is largely oxidized before entering the circulation. Larger percentages of sugar may be obtained but they involve the use of larger doses.

Intravenous injections of adrenalin are followed by a larger excretion of sugar where a dose of from 5-10 c.c. of adrenalin is put into a dog of from 8-15 kilos. Five or six per cent. of glucose may be observed under these conditions, but the percentage is sometimes much smaller. A rise in the blood pressure is an accompaniment of the glycosuria, but the latter outlasts this rise.

Other conditions being similar, a given dose of adrenalin (from 2-15 c.c.) gives rise to a greater excretion of sugar when administered by the peritoneal cavity than when given intravenously. In well-fed dogs of medium size, a dose of from 4-6 c.c. is always, or nearly always, followed by some degree of glycosuria. Somewhat larger doses almost regularly occasion the appearance of from 3-6 per cent. of sugar within an hour of the completion of the injection. The percentage of sugar may rise to 10 per cent. or more. Sugar has in some cases been detected within fifteen minutes of the completion of the injection. The systemic blood pressure has been observed to rise after intraperitoneal injections, but not to the height noted after intravenous infusions. Thus, in a dog of 11 kilos, there was a rise from 100 m.m. to 110 m.m. of mercury after an injection of 10 c.c. of adrenalin. Some rise was maintained for about an hour. Then there was a fall to below 100 m.m. Under similar conditions an intravenous dose of 10 c.c. of adrenalin might be expected to cause a rise from 100 m.m. to 130-160 m.m. of mercury.

By mouth adrenalin apparently has no effect in ordinary doses. A well-fed dog of 13 kilos received 10 c.c. of adrenalin by mouth without resulting glycosuria—an experience which corresponds with the known absence of physiological effect of gland extracts upon the human subject.

Effect of Dilution.—In the case of intraperitoneal injections of adrenalin, the excretion of sugar appears to be comparatively small when a considerable degree of dilution is practised. Thus in a well-fed dog of 8 kilos, 10 c.c. of adrenalin with 40 c.c. of 0.85 per cent. salt solution, gave rise to the appearance of 0.16 per cent. of sugar in 1000 c.c. of urine—a smaller total than is usual following such a dose. Sometimes, indeed, glycosuria does not appear, as for instance in the case of a well-fed dog of 6 kilos, which received 4 c.c. of adrenalin with 12 c.c. of 0.85 per cent. salt solution. Four hours and nineteen minutes later, 30 c.c. of urine contained no sugar.

Size of the Dose.—Within certain limits the quantity of sugar excreted appears proportional to the dose of adrenalin, but the relationship has not yet been carefully studied. It is certain that doses smaller than those usually employed may suffice to induce glycosuria. Thus in a dog of 5.5 kilos, an injection of 2 c.c. adrenalin with 2 c.c. 0.85 per cent. sodium chloride solution was followed by the appearance of 3.75 per cent. of sugar in the urine. There is reason to think that when a certain dose is followed by a very large excretion of sugar a larger dose would not have materially increased this output.

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[1] Abstract of paper delivered at the annual meeting of American Physicians held in Washington, April 29, 30, 1902.

[2] Herter & Richards. Note on the Glycosuria Following Experimental Injections of Adrenalin. MEDICAL NEWS, Feb. 1, 1902.

[3] The Blood-Pressure Raising Principle of the Suprarenal Gland. Journal of the American Medical Association, Jan. 18, 1902.

[4] Using a standard solution of $KMnO_4$ in which 1000 c.c. of the solution=0.8467 gm. $KMnO_4$.

Duration of the Glycosuria.—The glycosuria after a moderate intraperitoneal dose of adrenalin (say 5-8 c.c. in a dog of 10 kilos) lasts usually somewhat less than twenty-four hours. As a rule the glycosuria is at its height within a few hours after the administration of the adrenalin. The excretion of sugar then declines rapidly and the urine soon contains only a fraction of one per cent. of reducing substance.

Total Quantity of Sugar Excreted.—The total amount of sugar excreted under the conditions just mentioned is usually not more than a few grams. The very high percentage sometimes observed soon after the injection of adrenalin might lead one to expect a much larger total excretion than actually occurs. The explanation of this unexpectedly small output of sugar lies in the rapid decline of the glycosuria after the first few hours.

Nature of the Sugar Excreted.—No careful study has yet been made of the chemical constitution of the sugar excreted after adrenalin, but there is reason to think that glucose is the chief, if not the sole, constituent of the urine, in at least most instances of adrenalin glycosuria. In those cases in which the results of titration with Fehling's solution have been compared with the results obtained by fermentation there has been a close agreement. A glucosazon is obtainable without difficulty. The urines examined have shown dextrorotation. The chemical nature of the carbohydrates deserves much more careful study as it is by no means proven that dextrose is the only sugar present in the urine after adrenalin.

Sugar Content of the Blood.—Numerous observations on the sugar content of the blood before and after the production of adrenalin glycosuria indicate that in well-fed animals there is regularly an increase in the blood sugar. The following observation which was made by Dr. A. N. Richards is in several respects instructive.

A well-nourished dog (7.6 kilos) was fed 12 hours previous to the intraperitoneal injection of 8 c.c. of adrenalin.

Blood.	Amount.	Sugar.	Coagulation Time.
Normal	29 gm.,	0.26 per cent.,	4 m., 00 sec.
5 minutes after injection	15 gm.,	0.36 per cent.,	2 m., 15 sec.
10 minutes after injection	11.5 gm.,	0.40 per cent.,	2 m., 00 sec.
32 minutes after injection	10.7 gm.,	0.44 per cent.,	2 m., 20 sec.
1 hour after injection	11.8 gm.,	0.43 per cent.,	4 m., 10 sec.
5 hours after injection	10.8 gm.,	0.31 per cent.,	3 m., 05 sec.
17 hours after Injection	27.3 gm.,	0.10 per cent.,	3 m., 00 sec.

These results, which are typical, speak for themselves and call for little comment. The rapid increase in the blood sugar after injection is striking. Another point of interest is the subnormal content of sugar after the lapse of 17 hours. The increased rapidity of coagulation noted here has been observed in other instances, but appears to be unconnected with the occurrence of glycosuria. Dr. Richards has made a careful, detailed study of the behavior of the blood sugar after adrenalin and his results will soon be published.

Influence of the State of Nutrition.—In general it may be said that the largest quantities of sugar have been observed in well-nourished dogs that had been recently fed. An adrenalin glycosuria may be obtained, however, even in dogs that have to be starved for two or three days. The glycogen content of the liver is undoubtedly a factor of much importance in determining the degree of the glysosuria. Sufficiently careful observations have not yet been made with reference to the influence of this factor, but there is some evidence that after a period of starvation, combined with the administration of phlorhizin, the excretion of sugar induced by adrenalin is very small. Thus in a dog of 20 kilos, after a period of fasting and of dosing with phlorhizin, 10 c.c. of adrenalin intraperitoneally failed to cause glycosuria during the first 4 hours following the injection. During the next 20 hours the urine contained 0.1 per cent. of reducing substance.

On the Apparent Tolerance which Follows Repeated Intraperitoneal Injections of Adrenalin.—Observations were made in regard to the effects of repeated injections of adrenalin in four dogs, of which only three were normal, the fourth having had the spleen and one half the pancreas removed at previous operations.

Injections were usually made every third day with doses gradually increasing. After about one month, two of the dogs died in consequence of excessive doses of adrenalin. The remaining animals, including the splenectomized dog, received injections during about two months. It was observed that the usual symptoms of an injection of average size became less pronounced than at the beginning of the experiment and that the sugar excretion was very much less. In the case of the splenectomized dog sugar ceased to appear in the urine after the last three injections, although the doses were larger than at the beginning. The appetite was very slight at this period and there is no doubt that the animals were in a state of partial inanition. To this state of inanition can almost certainly be attributed the failure of sugar to appear after the injection of adrenalin. This is indicated by the fact that in the case of the two dogs just mentioned large quantities of sugar appeared in the urine after small injections of adrenalin made after a two weeks interval in which the animals took a liberal amount of food.

Why the symptoms following intraperitoneal injections should grow less pronounced with repeated doses is not yet clear. In regard to these effects a condition of actual tolerance seems to become established. It cannot be said that our experiments prove that no tolerance to the glycosuria-inducing action of adrenalin is established as the result of repeated injections. Such a tolerance is observed in the case of morphine and apparently depends on an increased oxidizing activity on the part of the cells.

Symptoms of Intraperitoneal Injections.—Within a few minutes after the injection of an ordinary dose of adrenalin the animal vomits. After 20 minutes or half an hour, a period of intense excitement and restlessness usually sets in and lasts for about an hour. This condition is followed by a period of prostration, which is often pronounced in small dogs. The day following the injection the appetite is usually entirely lost. On the second day the animal begins to eat again and the signs of prostration are no longer noticeable.

After fatal doses (10-12 c.c. in dogs of 5-8 kilos) the symptoms are similar to those described, but more intense. There is repeated vomiting in many instances and a bloody diarrhea is usual. The prostration after the period of excitement is profound and death commonly ensues within 24 hours. At autopsy the intestine is found to be the seat of intense congestion or hemorrhage into the mucous and submucous layers and the greater part of the intestinal tract may be denuded of its epithelium. The pancreas may be the seat of numerous hemorrhages and local necroses, but in other parts the normal appearances may be preserved.

Glycosuria after Local Applications of Adrenalin.—At an early period of the research it seemed desirable to determine whether the greater efficacy of the intraperitoneal method in the production of glycosuria was dependent on the better opportunity for the local action of the adrenalin on the pancreas. The pancreas was therefore exposed in a number of normal dogs and adrenalin applied directly to the presenting surface by means of a brush. It was found that marked glycosuria follows the application of small quantities of adrenalin to the pancreas, quantities which when applied locally to other parts of the body either give rise to no excretion of sugar, or to a trivial glycosuria.

As a rule the local application of adrenalin to the pancreas leads in a few moments to a deepening in the color of the gland at the area of contact. Sometimes this local reddening of the surface of the gland is preceded by a marked pallor of the organ, but this appears to be exceptional. The glycosuria usually sets in promptly after an application of 1 c.c. of a 1-1000 solution of adrenalin chloride. Usually sugar may be detected in the urine within an hour of the application. It has been observed within ten minutes of the painting. Sometimes one or two hours have elapsed before sugar was detected. The minimal dose which is capable of inducing glycosuria has not been determined, but it seems probable that in some small well-fed dogs less than 0.5 c.c. of adrenalin (1-1000) would suffice to cause some degree of glycosuria.

Examples of glycosuria from local painting of adrenalin are the following:

1. Both surfaces of the pancreas of a dog of 10 kilos were painted with adrenalin (2 c.c. of 1-2000 solution of adrenalin chloride). Within 10 minutes the urine contained more than 5 per cent. of sugar.

2. Dog, 8.4 kilos, one c.c. of adrenalin (1-1000) was painted on the pancreas of a dog that had been fasting for two days. Two hours 10 minutes after, the urine contained 2.8 per cent. sugar.

3. Dog, 8.5 kilos. The pancreas was painted with 2 c.c. of adrenalin (1-1000). Three hours after, 0.4 c.c. of urine have a strong reducing action.

Control Experiments.—It was of course of the first importance that control observations should be made in order to determine whether applications of adrenalin to other organs than the pancreas are not followed by glycosuria. The following notes indicate the nature of the results attending such control experiments.

1. Dog, 10 kilos, spleen exposed and painted with two c.c. adrenalin (1-1000). During the second 15 minutes urine shows slight reduction (slight yellowish residue on casserole). Other samples negative.

2. Dog, 11 kilos, fed upon sugar. Two and one-half c.c. adrenalin injected directly into the liver substance. Small sample of urine after 3 hours contains 0.7 per cent. sugar. Other collections negative.

3. Dog, 10 kilos. Two c.c. adrenalin with 2 c.c. water injected into into mesenteric vein. 1¾ hours after, urine contained 0.2 per cent. sugar.

4. Dog, 7.5 kilos. Three c.c. adrenalin and 3 c.c. water injected into mesenteric vein. After 1 hour 10 minutes sugar 1.11 per cent.

5. Dog, 9 kilos. Two c.c. adrenalin painted on surface of liver. 1½ hours after, urine negative.

6. Dog, 8 kilos. Two and one-half c.c. adrenalin with 2½ c.c. water injected into mesenteric vein. One hour 20 minutes after injection urine contained less than 0.5 per cent. sugar.

7. Dog. One c.c. adrenalin applied to surface of pia-arachnoid. Urine negative.

These and other observations show plainly that the local application of adrenalin to the pancreas is distinctly more effective in causing glycosuria than is its contact with the liver, spleen or brain. It should be noted that although in several of the control experiments much larger quantities of adrenalin were used than in the case of the applications to the pancreas, the percentages of sugar in the urine were small. It seems extremely probable that when adrenalin is infusd into a mesenteric vein rather rapidly, as in these experiments, a small amount of the substance reaches the pancreas and acts upon its cells. On the other hand it is not improbable that in the case of the experiments where adrenalin is painted on the surface of the pancreas a very small quantity of the active material reaches other parts of the body. Since we cannot completely exclude from the circulation the pancreas without producing glycosuria we are unable to say whether the contact of adrenalin with other cells than those of the pancreas is or is not capable n itself of inducing glycosuria. We may, however, feel certain that applications of adrenalin to pancreatic cells are peculiarly effective in the production of glycosuria. The difference between the behavior of pancreatic and other cells in this respect is so pronounced that we are justified in regarding the glycosuria of adrenalin as pancreatic in character.

The pronounced nature of the glycosuria following intraperitoneal injections appears to be mainly attributable to the readiness with which the adrenalin comes into contact with the pancreas. Experimental injections of colored fluids into the peritoneal cavity give support to this view. Other experiments, which need not be described here, show that when the pancreas is rendered comparatively inaccessible to intravenous and intraperitoneal doses of adrenalin the glycosuria is less than would otherwise be expected.

Nature of the Action of Adrenalin on the Pancreas.—The well-known vasoconstrictor action of adrenalin naturally suggested that the explanation of the glycosuria was to be sought in a derangement of the circulation in this gland, probably one induced by narrowing of the arteries. Two observations, however, had been made which appeared opposed to this explanation. In the first place the local application of adrenalin is followed by an appearance of congestion and not usually by blanching. Secondly it was found that after intravenous injections of adrenalin followed by marked glycosuria the pancreas in several instances showed on inspection no alteration in color, which could be interpreted to indicate a change in the caliber of the afferent vessels. Further investigation of the subject showed very clearly that substances may be applied to the pancreas which cause marked congestion but no glycosuria. On the other hand it was found that a blanching of the gland, as from a 3-per-cent. cocaine-hydrochlorate solution, was not followed by glycosuria, though there is no doubt of the vasoconstrictor action of the drug when thus applied. It was also noted that substances which like amyl nitrite exert a vasodilator action are capable (at least under some conditions) of inducing marked glycosuria when applied directly to the gland. It is therefore impossible to establish any definite relation between glycosuria and the vascularity of the gland or of parts of the gland. It was further observed that there is no relation between elevation of the blood pressure and the glycosuria. Adrenalin was injected into the peritoneal cavity together with sufficient nitroglycerin to keep the systemic pressure much below normal. Yet glycosuria of the usual degree was observed.

While these various experiments do not prove that vascular derangements of the pancreas are of no significance in connection with the production of adrenalin glycosuria, they nevertheless point to the conclusion that if such derangements have a part in determining the glycosuria it must be of secondary importance.

Before obtaining a clue to what we believe to be the correct explanation of the nature of adrenalin glycosuria a number of experiments were made with a view to determining whether the blood drawn from the pancreaticoduodenal vein at the height of adrenalin glycosuria contains any substance capable of inducing glycosuria when injected into the portal system of a normal animal. The observations indicate that even large quantities of blood obtained in this way cause for the most part only a slight glycosuria. As this line of investigation did not appear promising it was not carried sufficiently far to prove whether the glycosuria noted might not be dependent on the increased sugar content of the injected blood or (what seems improbable) on the presence of unchanged adrendalin in the blood.

The Action of Dilute Solutions of Potassium Cyanide on the Cells of the Pancreas.[1]—We are indebted to Prof. Jacques Loeb for calling our attention to the important work of Geppert[2] on poisoning by hydrocyanic acid. This suggestion was of much value for our work as it has given us at least a clue to a better understanding not merely of adrenalin glycosuria but of other forms of glycosuria and diabetes. The fact was well known to Claude Bernard that when animals are poisoned with hydrocyanic acid the blood in the veins grows lighter in color and may assume a bright arterial hue. The explanation of this striking phenomenon has been given by Geppert in his classical work. This investigator showed that in experimental hydrocyanic poisoning the blood of the veins contains much less carbon dioxide than normal and much more oxygen, the percentage of oxygen falling only a little below that of the arterial blood. He further showed that the oxygen utilized in the organism is markedly diminished. A very careful scrutiny of all the facts brought out by Geppert's experiments fully justifies the conclusion that the disturbance in the gas exchanges of the body are referable to the poisonous action of hydrocyanic acid on the cell protoplasm of the organism. This action is of such a nature that it prevents the cells from taking oxygen from the blood as in health. Hence the blood of the veins assumes an arterial tint.

With a knowledge of Geppert's work in mind it seemed very desirable to try the effects of hydrocyanic acid on the cells of the pancreas, with a view to testing the idea that local disturbances of oxidative function, limited wholly or very largely to this particular group of cells, might give rise to glycosuria. The experiments which have been made bear out the correctness of this idea. A typical experiment is the following: Dog about 7.5 kilos, urine normal. 0.5 c.c. of $\frac{N}{1000}$KCN solution was applied to one surface of pancreas, which became bright red. After 30 minutes the urine showed decided reduction of Fehling's solution. After about 1 hour, urine negative. Then another application of about 2 c.c. of same solution to surface of gland; also 1 c.c. injected slowly into gland. After 1 hour urine had 2.1 per cent. of glucose; 2d hour 0.85 per cent. glucose, 3d hour, slight reduction.

Control Experiments.—The importance of control experiments is of course evident. The following observations are instructive in this connection, as checks to the pancreatic applications.

1. Dog, about 17 kilos. Loop of small intestine painted several times with $\frac{N}{1000}$KCN solution (say 1-2 c.c.), then 2 c.c. of the same solution injected into the subperitoneal layer of the intestine. Urine negative.

2. Dog, about 10 kilos. Three c.c. $\frac{N}{1000}$KCN solution injected slowly into mesenteric vein. 1 hour and 10 minutes later, urine absolutely negative.

These experiments and others of the same character leave no doubt that the absorption of minute doses of hydrocyanic acid by the cells of the pancreas is followed by a glycosuria of short duration. In the change in the color of the gland we have ocular evidence of the action of the poison in preventing the cells from taking up oxygen as under physiological conditions.

The results of experimentation with potassium cyanide made it important to determine the local effects of some members of that large group of substances which have an energetic reducing action. It was thought that the use of such reducing substances might interfere with oxidation within the pancreatic cells and thus give results comparable with those obtained with potassium cyanide.

Effects of the Application of Reducing Substances to Pancreas.—Only the briefest references can here be given to the action of the various reducing substances which were employed.

Sulphurous Acid (SO_2).—An application of 0.5 c.c. of a saturated aqueous solution of SO_2 was made to the pancreas of a dog of 7 kilos. The gland whitened as from coagulation of proteids. Urine before operation negative; 45 minutes later about 2 per cent. sugar.

Ammonium Sulphide $(NH_4)_2S$.—The pancreas of a dog of 5.5 kilos was painted with 0.5 c.c. of an ammonium sulphide solution made by passing sulphuretted hydrogen through standard ammonium hydroxide solution of 0.96 sp. gr. Urine 1 hour after showed slight reduction, 3 hours after, about 1 per cent. of reducing substance. In a second experiment of the same kind the glycosuria was less marked.

Sulphuretted Hydrogen.—A small current of sulphuretted hydrogen was allowed to flow against the surface of the pancreas for 15 minutes. The dog weighed 10 kilos. 2 hours later the urine showed slight reduction.

Illuminating Gas.—A stream of illuminating gas was allowed to flow against the surface of the pancreas of a dog of 19 kilos for one hour. Urine after this contained 1.7 per cent. of reducing substance.

Carbon Monoxide. (CO)—Twenty liters of pure carbon monoxide warmed to the body temperature were allowed to flow for one hour against the pancreas of a dog of 7.8 kilos. The urine after this contained a small quantity of reducing substance.

Benzyl Alcohol. ($C_6H_5CH_2OH$)—Two c.c. of benzyl alcohol were applied to the pancreas of a dog of 12 kilos. 3 hours later the urine contained 3.57 per cent. of sugar. The color of the gland deepened, but there were no indications of coagulation.

Pyrogallol and Allied Phenols.—The well known affinity of pyrogallol (1-2-3 trihydroxybenzene) for oxygen suggested the use of this substance, which was employed in aqueous solution without addition of alkali. The following are typical results of trials made with this substance.

1. Dog, 6.4 kilos. The pancreas was painted with 1 c.c. of pyrogallol in 1-8 dilution. 3¾ hours after, 30 c.c. of urine contained 8 per cent. sugar.

2. Dog, 6 kilos. Two c.c. of pyrogallol (1-5 dilution) were painted on the pancreas. 2 hours after, urine contained ⅔ per cent. sugar.

Phloroglucin (symmetrical trihydroxybenzene), hydroquinone and pyrocatechin gave much slighter glycosurias than pyrogallol, but the observations are not sufficiently numerous to be conclusive.

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[1] Sodium fluoride seems to be an example of a substance which though devoid of reducing action is capable of causing glycosuria.

[1] Ueber das Wesen der Blausäure vergiftung. Deutsch. für klin. Med., s. 208, Bd. xv, 1889.

Pyridine, Piperidine and Quinoline.[1]—Experiments made with pyridine and piperidine, are of a special interest because, as shown by Abel, a conium-like substance is present in the active blood-pressure-raising constituent of the suprarenal gland and this alkaloid is known to contain a pyridine base. Pyridine reduces potassium permanganate in alkaline solution, but not in neutral solution and one would not predict for it a marked action in the production of glycosuria. In four dogs in which a 1-10 aqueous solution of pyridine was painted on the pancreas there followed only slight glycosuria. Piperidine (hexahydropyridine) has a chemical constitution which indicates a much greater reducing activity than that of pyridine. In five dogs in which aqueous solutions of piperidine (1-10 or weaker) were brought into direct contact with the pancreas large percentages of sugar were found in the urine—in one instance 11.7 per cent. It should be stated, however, that in another dog piperidine failed to cause the appearance of sugar. Here the failure of the sugar to appear did not appear to be connected with the quantity of piperidine used, for many times the usual dose was applied in this instance without leading to glycosuria. The explanation of these exceptional cases is not yet clear. In two instances in which the sugar of the blood has been determined the glycosuria after piperidine has not been associated with an increase of blood sugar, which suggests that there may be a renal element in these glycosurias. Quinoline appears to stand midway between pyridine and piperidine in its ability to produce glycosuria.

The Relation between Adrenalin Glycosuria and the Reducing Action of Adrenalin Chloride.—The observations to which reference has been made rendered it not improbable that the action of adrenalin in causing glycosuria is connected with its reducing activity. It was very easy to demonstrate that any oxidation of adrenalin chloride outside the body, which deprives it of its reducing power and of the characteristic Vulpian reaction with ferric chloride, also destroys its action in raising the blood pressure and in causing glycosuria. Numerous experiments with oxidizing agents including potassium permanganate and chlorine gas showed that adrenalin thus deprived of reducing action could be injected intraperitoneally in large amounts without producing any glycosuria or indeed any symptom whatever. The chemical nature of the substance or substances that result from the oxidation of adrenalin chloride is not yet known. Violent shaking with considerable volumes of neutral oxygen for periods of one or two hours caused a reddening of the adrenalin solution, but failed to deprive it of the ferric chloride reaction or of its ability to induce glycosuria.

Control Experiments with Substances which do Not Reduce.—The importance of control observations makes it desirable to give brief abstracts of some individual experiments which were made as checks to the studies with reducing substances.

1. Dog, 7 kilos. Two c.c. of a 13.5 per cent. ferric chloride solution painted on pancreas which whitened from coagulation. Urine 1 hour and 3 hours later negative.

2. Dog, 9 kilos. A 5-per-cent. sodium-chloride solution (of about body temperature) was allowed to flow on surface of pancreas for 20 (?) minutes; 280 c.c. were used; 1 hour later 30 c.c. urine gave less than 0.1 per cent. of reducing substance on long boiling. Five c.c. of this urine with 10 c.c. Fehling's solution caused no reduction. 5 hours later urine doubtful, possibly slight reduction.

3. Dog, 9 kilos. Ten per cent. solution of sodium hydroxide painted on pancreas, 1 c.c. being used. One hour later urine gives slight but undoubted reduction. 2⅝ hours after, slight reduction. 4 hours after, no reduction. 5 hours after, no reduction.

4. Dog, 7 kilos. One c.c. 10 per cent. hydrochloric acid painted on pancreas. 1, 3 and 5 hours later urine shows no reduction. A similar experiment gave a negative result.

5. Dog, 7.5 kilos. Pancreas painted with 3 c.c. bromine water. After 1 hour very slight reduction (trace). Later collections negative.

6. Dog, 8 kilos. Pancreas painted with 3.6 c.c. chlorine water. Urine, several collections, negative. Second collection (after 2¾ hours) slight suspicion of reduction, probably negative.

7. Small dog. Pancreas painted with 2 c.c. fresh hydrogen peroxide (Marchand's).

8. Dog, 6 kilos. Pancreas painted with 2-per-cent. solution of chromic acid, 2 c.c. used. No symptoms. Urine negative.

9. Dog, 1.4 kilos. Two c.c. of a saturated solution of $KClO_3$ were painted on the pancreas. 2¼ hours after urine negative.

10. Dog. 9 kilos. Two c.c. of 2 per cent. HNO_3 solution were painted on the pancreas. Urine negative.

This group of control experiments shows quite clearly that applications which are by no means indifferent in character may be made to the pancreas without causing glycosuria. Some of these substances have neither reducing nor oxidizing qualities, but are nevertheless distinctly injurious. Thus ferric chloride and hydrochloric acid coagulate the protoplasm of the cells with which they come in contact, and there can be no doubt that a 5-per-cent. sodium-chloride solution disturbs the normal osmotic relations. Other substances used possess a strong oxidizing action but failed to cause the appearance of sugar.

Relation between Experimental Pancreatic Glycosuria and Interference with Normal Oxidations of Pancreatic Cells.—The experiments heretofore made indicate plainly that a close relationship exists between the reducing power of a substance and the capacity of this substance to induce glycosuria when applied directly to the pancreas. There are indeed substances which possess active reducing power, but which have yielded only slight degrees of glycosuria.[1] On the other hand there is at least one poison, hydrocyanic acid, which is capable of bringing on glycosuria although it exerts no reducing action. As yet we have found no oxidizing agent which causes glycosuria when applied to the pancreas, but it is possible that such an agent may in time be discovered. Our present experience indicates that substances which have a strong reducing action are very much more likely to induce glycosuria than those which lack this power, although it also indicates that the ability to produce glycosuria is not always proportional to the reducing activity as measured *in vitro.* Thus a solution of adrenalin chloride of a given reducing power will cause much more glycosuria than a solution of hydroquinone of the same reducing activity. Nevertheless it appears that among substances of allied chemical constitution the ability to induce the appearance of sugar in the urine is at least roughly proportional to the reducing activity. We see this among substances of the pyridine and phenol groups.

It is not yet clear what interpretation should be put on the association of the power to reduce and the power to induce glycosuria. The striking case of hydrocyanic acid which acts by poisoning the cell so that it no longer takes up oxygen normally, suggests that the various reducing substances act by removing oxygen from the pancreatic cells. The quantity of oxygen thus removed can be calculated. It is so small in the case of a powerful glycosuria-inducing agent like adrenalin that we must hesitate to ascribe the appearance of sugar to the mere removal of this small amount of oxygen from the cells. Moreover we know that there are substances with marked reducing action which induce only slight glycosuria and are acquainted with at least one poison (hydrocyanic acid) which induces glycosuria, without having any reducing action. We are therefore inclined to attribute the glycosurias we have noted not necessarily to the reducing action of the substances concerned but to some toxic action on the cells. This action is, however, closely connected with the power of reduction. It is possible that in some instances (as in the case of carbon monoxide poisoning) the quantity of oxygen removed from the cells is sufficient to account for the disturbance in the function of the gland.

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[1] Salicylic acid gives rise to marked glycosuria when applied to the pancreas.

[1] Sodium thiosulphate is a powerful reducing agent, but has not yet yielded glycosuria in the course of our work.

Of the intimate nature of this functional disturbance we know nothing as yet. The instructive case of potassium cyanide suggests that in many cases the cells are poisoned in some way which interferes with their oxidative activities.

The discussion of hypotheses relating to this fundamental question will not be undertaken here.

On Glycosurias following Applications to One Portion of the Pancreas.—Early in the course of the study of adrenalin glycosuria it was observed that the reddening of the gland which commonly follows immediately upon an application of adrenalin is localized to the area of contact and superficial. This observation raised the question whether the action of the adrenalin is actually limited to the parts which show an alteration in color or whether there is a diffusion of the substance through the gland, such as must occur when an intravenous infusion of adrenalin is followed by glycosuria. In order to form an opinion on this important point a special form of experiment was devised. The pancreas was cut through, at right angles to its axis, and the incision was carried through the adjoining duodenum. The bleeding vessels having been clamped or tied an application of adrenalin chloride was made to one portion of the pancreas, special care being taken that none of the substance should come into contact with the unpainted part of the gland. This form of experiment was used not merely with adrenalin but with potassium cynaide and pyrogallol. The following notes indicate the nature of the results.

1. Dog, 4.5 kilos. Pancreas divided into two portions, a splenic one-third and a cephalic two-thirds. The splenic one-third was painted with 1-1¼ c.c. adrenalin chloride (1-500). 1½ hours after, 13.5 c.c. urine contained 10 per cent. of sugar.

2. Dog, 7.4 kilos. Pancreas divided into a cephalic one-fifth and a splenic four-fifths. The cephalic fifth was painted with 1 c.c. adrenalin chloride (1-500). 1½ hours after, 8½ c.c. of urine contained 3-4 per cent. sugar.

3. Dog, 9.5 kilos. Pancreas cut into two nearly equal parts. Splenic half painted with 1 c.c. $\frac{N}{1000}$ KCN solution, also 1 c.c. of same solution slowly injected into this part of the gland. Thirty minutes after injection urine contained 6 per cent. sugar.

4. Dog, 7.4 kilos. Pancreas cut into a cephalic three-fifths and a caudal two-fifths. Splenic two-fifths painted with 1½ c.c. $\frac{N}{1000}$ KCN solution. Two hours later 5 c.c. urine contained about 1.5 per cent. sugar.

5. Dog, 10.1 kilos. Pancreas divided into a caudal two-thirds and a cephalic one-third. Cephalic end painted with 1 c.c. pyrogallol solution (1-5) (not rendered alkaline). 1¾ hours after 4 c.c. urine show slight reduction. Two c.c. of urine with 10 c.c. Fehling gave yellow deposit on casserole.

What interpretation are we to put on these experimental results? So far as the pancreas is concerned the glycosuria which follows the local application to one portion of the gland must depend either on the absorption of the toxic substance by this portion of the gland alone or upon absorption by the unpainted as well as the painted portion. In the former case we must suppose that the substances applied to the gland do not enter the blood in sufficient amount to exert any effect upon the remaining piece of the pancreas. In the latter case we must suppose that these substances do enter the blood in an amount sufficient to act on the detached piece of the gland. If the latter view is correct we are dealing with a phenomenon comparable to the elimination of function that occurs when much the greater part or all of the pancreas of a dog is extirpated. But if this view be not correct, and the glycosuria arises from an effect limited to one part of the pancreas we are dealing with a phenomenon very different from the glycosuria of total extirpation. This conclusion is forced on us by the fact that a glycosuria may follow an application to much less than one-half the pancreas, whereas, as is well known, the extirpation of one-half the pancreas from the dog is only exceptionally followed by sugar in the urine. Owing to experimental difficulties which need not here be considered it has not been possible to decide this important point definitely.

Control experiments already referred to, together with others that have not been mentioned, indicate that doses of potassium cyanide from four to six times as large as those required to induce glycosuria when applied to the pancreas, fail, when infused into the circulation, to cause the appearance of sugar. This fact renders it extremely improbable, in the case of hydrocyanic acid at least, that any of the poison painted on one portion of the severed pancreas, reaches the remaining portion of the gland. If this view should prove the correct one it carries with it important physiological corollaries, which will be fully considered in another publication. The evidence at hand points to a positive specific action on the cells of the pancreas and not to a mere elimination of function, as in the case of glycosuria from pancreatic extirpation.

Relations between Human Glycosurias and the Experimental Glycosurias from the Action of Reducing Substances and other Poisons.—It is proper to refer briefly to the bearing of this research upon the interpretation of the phenomena of human glycosuria and diabetes. Our experiments show that a large variety of substances applied to the pancreas in the dog are capable of inducing glycosuria, probably by interfering in some way with the oxidations carried on by the pancreatic cells. The very intimate connection of the pancreas with these glycosurias leads one to ask whether there are not many examples of human glycosuria of similar origin. The glycosuria following conditions of asphyxia, as for instance after epileptiform seizures, can probably be referred to interference with the oxidations in the pancreas. The glycosurias noted after poisoning with carbon monoxide can, we believe, almost surely be explained by the effects of this gas on the pancreas. In the case of the ordinary chronic forms of human diabetes, with or without marked lesions in the pancreas, we are not yet in a position to speak positively, but our research suggests an explanation which may apply to many instances of this sort. It has long been known to physiologists that easily oxidizable reducing substances are constantly being produced in the organism and that the combustion of these substances is one of the fundamental activities of living protoplasm. We know that at least one gland, the suprarenal, produces a reducing substance[1] which is of great importance for the maintenance of the general vascular tone, and it is likely that there are other reducing substances formed by other kinds of cells, dextrose itself being for the moment left out of account. The blood containing these bodies streams through all parts of the animal mechanism including the pancreas. If now we imagine a disturbance in the normal balance between the oxidizing activities of the pancreatic cells and the production of reducing substances in other parts of the organism, it is easy to understand how a functional inadequacy of the pancreas might arise which would interfere (through an unknown mechanism) with the normal combustion of sugar and its appearance in the urine.

If this conception be correct the presence or absence of glycosuria in any organism may depend on the relation between two variable factors, production of reducing substances on the one hand and oxidative pancreatic activity on the other. The effect of an excessive production of reducing substances (as from diseases of the suprarenal gland) would be equivalent to a reduction in the efficiency of the pancreatic cells. In most cases of diabetes both factors may co-exist. Such a conception of the nature of diabetes helps to explain those instances where the pancreatic lesions are slight in degree.

This idea is put out as a suggestion, not as a fact. A large amount of very careful experimental work, involving a nice technic, is necessary to determine whether it has any substantial foundation. The establishment of the fact that the blood of some diabetic patients contains an excess of reducing substances, other than dextrose, would give substantial support to the conception here advanced.

Histological Alterations in the Pancreas and Experimental Pancreatic Glycosuria.—Experiments to which no reference has yet been made indicate that histological alterations in the pancreas are not a necessary condition of adrenalin glycosuria. Bits of pancreas removed before the production of such glycosurias were compared with bits removed at the height of the sugar excretion. Tissues fixed in Ohlmacher's fluid and in formalin and stained by the ordinary methods[2] failed to show recognizable alterations.

After fatal doses of adrenalin by peritoneum the pancreas may be the seat of focal necroses and the islands of Langerhans may be the seat of destructive changes, but we attach no significance to these lesions in their relation to glycosuria.

It is instructive to note that glycosuria may follow the application of various substances to that portion of the pancreas which contains very few of the cell clusters of Langerhans. It is impossible to state whether a more marked glycosuria follows applications to the tail of the organ (rich in islands of Langerhans) than to the head. Perhaps a large number of experiments made under conditions nearly alike, would throw some light on this point, but a small number of observations could not decide it. The observations which have been made do not indicate any distinct difference in the results from painting the tail and painting the descending cephalic part, which in the dog is most free from Langerhans' islands.

The Physiological Significance of the Experimental Method Employed in this Research.—It has been shown that various substances applied directly to the pancreas are capable of acting on the cells of this gland in such a way as to induce glycosuria. Evidence has been brought out which makes it in a high degree probable that these substances, so varied in chemical composition, act through their interference with the oxidations normally carried on by the protoplasm of the pancreatic cells, though in a manner as yet unknown to us. The fact that so many substances which interfere with oxidative processes are capable of inducing glycosuria deprives adrenalin glycosuria of some of the special significance which attached to it before it was discovered that so many allied varieties of pancreatic glycosuria are readily induced.

The case of adrenalin glycosuria will always be invested with that special interest which comes from circumstances that adrenalin chloride is representative of an important internal secretion. It is, however, an essential gain to physiology that we now recognize the glycosuria from suprarenal extracts to be a particular example of glycosuria from reducing substances rather than a wholly isolated and unrelated form of disturbed carbohydrate metabolism.

But just as we must look upon adrenalin glycosuria as one of a large number of forms of pancreatic glycosuria from some derangement in the oxidative functions of a particular gland, so must we look upon all pancreatic glycosurias from disorders of oxidation, as a particular case of disturbed oxidation. By means of local applications of substances like potassium cyanide, adrenalin and piperidine to other types of animal cells we can interfere profoundly with the oxidations there carried on. Thus it seems likely that we possess a method which will teach us much of importance about the metabolic activities of the kidneys, the muscles and perhaps the nervous system. Interference with the activities of the pancreatic cells gives us a striking signal, glycosuria, but there is every reason to think that other groups of cells may be thrown out of action with equal precision, if not with equally obtrusive metabolic effects. The kidney of one side can be thrown out of function, so far as oxidations are concerned, without gross mechanical insults. One would expect that while the "vital" functions are thus placed in abeyance the processes of diffusion and filtration would be little disturbed. By means of such a method it seems not unreasonable to hope for new light as to the origin of uric acid, glycuronic acid, hippuric acid, etc.

Experiments which we have made suggest that there are other substances than phlorhizin which, acting on the cells of the kidney, lead to glycosuria. It is not impossible that adrenalin while acting chiefly on the pancreas, when intravenously infused, acts also on the kidney. On this and allied topics a further report will be made.

At present it is desired that our research be regarded as an introduction to a better knowledge of the all important subject of oxidations and reductions in the organism, as well as a contribution to the pathology of adrenalin glycosuria.

Note A.—It is desirable to make reference to certain conditions of the experiments which constitute the basis of the research. The dogs used were well nourished and were operated upon within 24 hours after a meal of raw beef, which with few exceptions was the habitual diet. Previous to each experiment the urine was carefully removed by catheter and examined for sugar, the bladder being thoroughly emptied. In all cutting operations the animals were fully anesthetized with ether. They were taken from the holder promptly after recovering from the effects of ether, in order to have them under comfortable and natural conditions. Morphine and other substances which cause the appearance of reducing substances in the urine were never employed as narcotics.

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[1] The following demonstration of the reducing activity of this gland is very striking. If a dog be injected with a preparation of alizarine blue, the blue particles will be found in those organs which have little or no action in reducing the pigment to a colorless substance. But in cells which reduce strongly (muscles, lungs, suprarenal gland) the blue color rapidly disappears and the suprarenal gland appears in striking contrast to surrounding structures.

[2] Dr. E. K. Dunham and Dr. Alice C. Brown were so kind as to make these preparations.

Note B.—It will naturally occur to the reader that the substances employed in the experiments may have passed into the urine unchanged, thus accounting for some reducing action on the part of the urine. In the case of adrenalin and piperidine the reducing power of the small amounts actually used is so small that it would entirely fail to account for the sugar which was detected, even if the entire quantity used came through unchanged. In the case of carbon monoxide the question of passage into the urine does not arise. Sodium fluoride has no reducing action outside the body and that of potassium cyanide is extremely slight. After pyrogallol a fermentable sugar appears in the urine.

For these and other reasons (especially the results of the control experiments) there is no reason to ascribe the glycosurias noted in our experiments to the excretion of the reducing substances used.

ORIGINAL ARTICLES.

SUDDEN DEATH IN AORTIC STENOSIS WITH REPORT OF TWO CASES, ONE COMPLICATED WITH AN ANEURISMATIC-LIKE DILATATION OF THE AORTA AT ITS ROOT AND MARKED STENOSIS OF THIS VESSEL BEYOND THE DILATATION.

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THERE are numerous conditions affecting the vascular system, particularly in the thoracic region, the etiology, pathology and clinical findings of which call for further study and investigation. These affections are scarcely to be regarded as a distinct morbid class, and they are often found in association with disease of the aortic valves. In this connection a brief report of the following case possesses sufficient interest to claim special attention:

A. E. F., aged forty-four years, married, female, accustomed to arduous household duties, but of extremely temperate habits. The mother had died of carcinoma of the stomach, the father of pulmonary tuberculosis at an early period of life. No other hereditary taint discoverable. The patient had had all children's diseases, and later in life two mild attacks of acute articular rheumatism, separated by an interval of seven years. There is no history of any cardiac complications having developed during the attacks of rheumatism. About January 1, 1897, the patient first consulted me on account of dyspnea on the slightest muscular exertion and occasional attacks of palpitation of the heart. There were marked pallor of countenance and slight vertigo, the latter symptom being most marked on rising in the mornings.

A physical examination revealed the presence of aortic stenosis—all of the classic signs being in evidence. Besides, there was the history of previous rheumatic attacks to explain the origin of the condition. The result of treatment was to improve the general condition and to relieve the slight dyspnea, after which the patient dropped from observation. In the fall of 1900 the patient returned with more marked local symptoms, some of which were new, such as frequent consticting cramps and pains, though not severe, radiating to the neck and left arm, and considerable cough. The cerebral symptoms were also more pronounced, the extremities cold, and the general condition feeble. In addition to the signs of aortic stenosis, it was now observed that the aortic second sound was distinctly accentuated, and an abnormal area of dulness about five centimeters in its greatest diameter and extending upward and to the right from the base of the heart was noted. These two signs led to the opinion that the dilatation of the aorta with probable involvement of the sinuses of Valsalva existed. Later an aortic regurgitant murmur became audible, although it was practically masked by the loudness and extremely harsh character of the systolic bruit. The patient's general condition showed slight improvement for a time, but this did not continue and on October 19, 1901, she died suddenly during sleep.

The autopsy was made twenty hours after death, Dr. L. Napoleon Boston assisting. The body of a fairly-nourished, medium sized woman; slight livores. On opening the thorax some serous fluid was found in the pericardium and right pleural sac. The lungs showed no macroscopical lesions. The left ventricle of the heart was considerably hypertrophied and its cavity somewhat dilated, but the muscular structure of the organ did not present any other macroscopical abnormality. The aortic ring and the aortic segments were found to be the seat of marked atheromatous change; the latter were united, puckered and contracted, and of calcareous consistence. These changes occasioned decided narrowing of the orifice and prevented the cusps from falling back into the sinuses of Valsalva during the systole, and offered obstruction to the blood-stream. On passing the index finger from the left ventricle, the valves felt like a hardened, calcareous ring which admitted only the tip of the finger on firm pressure. Above the aortic segments and including the sinuses of Valsalva the aorta was dilated, and the orifices of the branches of the aorta were distinctly atheromatous. The dilated part involved about six centimeters of the aorta and showed an aneurismal-like pouching. For some distance above the dilatation the caliber of the aorta was considerably diminished. The lumen of the anterior coronary artery was not obstructed, but showed some atheromatous patches and it was slightly atheromatous at the orifice. The mitral leaflets and also those on the right heart were normal.

The stenosis of the aorta beyond the dilated portion might be looked upon as a congenital or developmental anomaly. Time was not allowed to examine the aorta throughout its entire course, but it was clearly observed that the stenosis of this vessel was not confined to the isthmus, or that portion between the left subclavian artery and the mouth of the ductus arteriosus—a point at which a moderate degree of congenital narrowing, or more rarely even complete atresia, is not very uncommon. On the other hand there was marked atheroma of the orifices of all of the branches of the aorta so far as this vessel could be examined. Left ventricle hypertrophy results from these conditions, but in my case the enlargement could be easily accounted for by the aortic stenosis. The diminished caliber of the aorta in the case reported above may be accounted for partly by the slowing of the circulation and lessened volume of the blood entering the aorta owing to the existence of the constricted aortic orifice.

Burke[1] discusses the anatomical and clinical sequences of diminution in the caliber of the aorta and has summarized his results as follows: "(1) Anatomical changes in the (*a*) heart—a left-sided hypertrophy, to which may subsequently be added dilatation of left ventricle and auricle, signs of chronic pulmonary congestion, hypertrophy and perhaps dilatation of right ventricle: (*b*) in the arteries—an arteriosclerosis in young subjects as an expression of long-continued elevation of blood pressure. (2) Clinical appearances—paleness of face, a feeling of oppression in chest, cough with catarrhal expectoration, signs of dilatation, hypertrophy and insufficiency, expansion of the boundaries of the lungs, a chronic bronchitis, increasing weakness of the right ventricle, enlargement of the liver, albuminuria, general edema." In women the condition leads to a primary or even a pernicious anemia. On the other hand, in men the picture is of actual cardiac disease.

Sansom[2] points out that syphilis may not only cause stenosis of the aortic orifice, but also marked narrowing of the first portion of the aorta. Alcoholism has also been assigned as a cause of these changes. While the husband of this patient was syphilized, she herself had never given any symptomatic indications of the presence of this disease. W. B. Hadden[3], Walsham, and others have, however, reported cases of obliterative arteritis in which there was a history of neither syphilis or alcohol. Most writers, and I agree fully, contend that the etiology is somewhat obscure. In my own case the moderate stenosis of the aorta and of the orifices of the branches was ascribed in great part to the previous rheumatic attacks and the hard manual labor.

A point of considerable interest is the strictly localized character of the principal atheromatous changes and their extremely advanced grade. Pure aortic stenosis is unquestionably rare and other conditions are constantly being mistaken for this lesion. Broadbent[4] says that aortic stenosis is the least common of the valvular affections of the left side of the heart as shown both by statistics and by clinical experience. Kelynack[5] states that among 1,635 cases examined while pathologist to the Manchester Royal Infirmary, he found five examples in which the aortic stenosis could be considered the essential feature. A considerable number of instances in which aortic stenosis was associated with mitral stenosis and also many in which aortic incompetency was conspicuously combined have been met by both pathologists and clinicians, but these do not concern us at present.

The diagnosis of aortic stenosis is too often made without due caution and reserve, and I shall embrace this opportunity to point out that the comparatively rarity of the affection is not fully appreciated by the profession at large. When all of the characteristic signs are present, we are justified in making a diagnosis with a feeling of assurance, but if there be missing certain of these cardinal signs—I refer particularly to the systolic basic thrill and the characteristic pulse—a certain diagnosis should not be ventured, for the reason that the chances of error are too great, there being a number of conditions other than aortic stenosis that may give rise to a basic systolic murmur and certain additional signs of constriction at the aortic orifice. In my case it was felt that the thrill and loud bruit which was conveyed to and clearly detected over the right subclavian artery might be to some extent at least occasioned by an obliterative arteritis affecting this vessel. Dr. Mahomed[1] mentions a case of obliterative arteritis of the subclavian, aorta and coronary arteries in which the diagnosis of aneurism had been made during life. A thrill and bruit had been observed over the subclavian and also anginal attacks. Percy Gould[2] has recorded a somewhat similar case.

Moreover, appreciating the fact from previous experience and observation that dilatation beyond the aortic ring, which was present in the case that forms the basis of my paper, will produce a systolic basic murmur irrespective of aortic stenosis, I should not have made an assured diagnosis of this lesion had not all the diagnostic signs other than the murmur been present also, and that prior to the development of the signs of aortic dilatation. To discuss the differential diagnosis of basic systolic murmurs would lead me beyond the scope of my paper; but I venture to affirm that while the aortic stenosis is, when fully characterized, most readily recognized, on the other hand, owing to the frequent absence of certain cardinal signs, particularly the thrill, the characteristic pulse, and the almost equally common concealment of the degree of hypertrophy by associated emphysema, it becomes the most difficult form of organic valve lesion to recognize with a feeling of absolute confidence in most cases.

The number of proved cases of aortic stenosis, therefore, is small because of the rarity of the concurrence of all of the characteristic signs. Conversely their association in the same case enables us to infer safely the existence of this lesion. These signs are (1) a small, slow and somewhat tense pulse; (2) a systolic basic thrill; (3) an enlargement of the left chamber; (4) a harsh and musical systolic murmur over the aortic area, and a feeble aortic second sound. A point of clinical interest in connection with the case reported is the greatly increased intensity of the second sound. This was attributed to the dilatation of the aorta above the valves; it does not belong to pure aortic stenosis in which *per contra* the intensity of the second sound is diminished. Moreover, it was not present when the case first came under observation.

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[1] Deut. Arch. f. klin. Med., Oct. 31, 1901.
[2] Diagnosis of Disease of the Heart and Thoracic Aorta, p. 44.
[3] Lancet, Feb. 11. 1888.
[4] Heart Disease, by Wm. Broadbent,. p. 124.
[5] Medical Press and Circ., May 11, 1898.

[1] Lancet, Feb. 16, 1884.
[2] Trans. of the Clinical Soc. of London, 1884.

It is worthy of note that to the time of death in my fatal case, the murmur was both loud and long, indicating great vigor of the ventricular systole. The extreme loudness of the murmur in this case lends support to the generally accepted view that the sonorous vibrations are generated by the eddies resulting from the passage of the blood through a small orifice into a larger channel, since the aorta was found postmortem decidedly dilated immediately beyond the aortic valves.

Acording to the history of my autopsied case and the evolvement of the physical signs, aortic stenosis existed prior to the occurrence of the dilatation of the aorta. If this be true, it is difficult in the extreme to account for the development of the aortic-dilatation above the valves, since aortic stenosis tends by its slower and less forcible distention of the aorta in the systole to produce a narrowing of the root of the aorta. It is to be recollected in this connection that the abnormally contracted condition of the aorta beyond the dilated part may have, by obstructing the blood-stream at that point, increased the tension on the proximal side or in the area embraced by the dilatation. Whatever may have been the cause it was most probably a comparatively sudden yielding of the aorta to the current of the blood.

The questions pertaining to the dangers that attend upon aortic stenosis are not definitely settled. That there is some risk of sudden death, more especially from syncope even in cases in which the symptoms occasioned by the lesion are of a mild character, is I believe, unquestioned. Moreover, this may occur in instances that do not show either obstruction of the coronary vessels, as in my own case and in two of the cases recorded by Kelynack, or any other non-valvular lesion.

Pick[1] also records a case of pure aortic stenosis in which the patient died suddenly in the midst of her work. The diagnosis of thoracic aneurism had been made during life. The constriction was so marked that it admitted only a seven-millimeter sound; otherwise the changes, both local and general, were insignificant. My note-book furnishes a brief history of a second case of uncomplicated aortic stenosis that suddenly terminated life and apparently from syncope, although no autopsy to verify the antemortem diagnosis of pure stenosis was permitted.

The patient was a male, aged sixty years, widower, by occupation a baker, and of German birth. The physical signs were typical. Attacks of syncope occurred and sometimes they caused the patient to fall. Quite severe injuries of the head were sustained on several occasions, and at last after an illness extending over a decade, sudden death supervened. General arteriosclerosis was associated.

The occurrence of unexpected, sudden death in aortic stenosis is a question of considerable interest. It is highly probable from the foregoing facts that, if pure cases only were considered, it would prove to be a not uncommon mode of termination in this exceptional lesion. It must be confessed that I was inclined to attribute the occurrence of sudden death in my autopsied case to rupture of the aneurism, but the postmortem examination showed this view to be erroneous. Neither could it be justly ascribed to coronary disease in view of findings at necropsy.

Kelynack has also recorded a third case which reached an advanced stage, accompanied by dropsy, in which death took place quite suddenly from syncope. This gives us a total of six cases in which sudden death occurred in this affection (and the literature has by no means been exhaustively examined) and in at least four of these no complicating lesions of any moment were noted. Obviously, the end may also be reached in a slow and gradual manner amid the evidences of progressive cardiac failure.

REMARKS ON THE DIAGNOSIS OF PREGNANCY IN THE EARLY MONTHS.[1]

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THE best evidence of uterogestation at whatever period is to be sought in the characters of the uterine tumor. These pertain in part to the uterus itself and in part to its contents. In the first weeks of pregnancy the ovum occupies a relatively small portion of the uterine cavity. By the end of the third month it wholly fills it. During the greater part of the first trimester the properties of the uterine tumor which appeal to the examining fingers as evidence of pregnancy are wholly or mainly those of the uterus itself, changes superinduced in it by the physiological process going on within. Toward the end of the third month and from that time on palpation is in great part addressed to the ovum as felt through the softened and thinned uterine walls. Soon after the time when the ovum begins to fill the entire uterine cavity the principal indications of pregnancy are what may be termed the fetal signs, such as fetal parts, passive movements, active movements and fetal heart tones.

Obviously the changes in the uterus incident to early pregnancy do not become sufficiently marked to be distinctly appreciable by the touch within a period of several weeks, usually not much before the sixth. Some of them are obscured or lost a few weeks later when the uterus becomes distended by the product of conception.

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[1] Präg. med. Woch., Feb. 1, 1900.

[1] Read before the New York State Medical Society, Albany, Jan. 28-30, 1902.

During the greater part of the first three months, the structural changes in the uterus itself constitute almost the only reliable objective evidence of pregnancy and some of these changes are sufficiently marked to be available for diagnosis only between the fifth and tenth week or a little longer.

The object of this brief paper is to consider the more valuable signs of pregnancy at this period as elicited by bimanual examination of the uterus with special reference to certain facts that have not been sufficiently emphasized by obstetrical writers.

All the diagnostic properties of the uterine tumor which appeal to the touch in the first three months relate to size, shape and consistence; they may be stated as follows: (1) Softening of the cervix; (2) size of the body and progressive growth at the rate of pregnancy; (3) extreme compressibility of the isthmus, Hegar's sign; (4) relative density of the median and lateral sections of the isthmus; (5) asymmetry and differential density of the body; (6) consistence and shape of the body as a whole.

Changes in the Cervix.—The structural changes in the cervix are not sufficiently pronounced to be of much diagnostic value before the end of the second month. Beyond this period they soon become so. They may be absent, however, during the early months in the presence of cicatricial tissue and they may be simulated by metritis in the non-gravid uterus.

Differential Density of the Isthmus.—A characteristic of the isthmus uteri, which was utilized by the writer for the diagnosis of uterogestation before the publication of Hegar's sign, is a more pronouced softening of the central than of the lateral sections of that segment. The non-gravid uterus presents at the isthmus a relatively dense longitudinal median ridge. In the gravid uterus within the period with which we are dealing the middle portion is less dense than are those on either side of it. This change in the differential density is generally well marked by the fifth or sixth week and it is at least not inferior in diagnostic value to Hegar's sign.

The difference in the relative density of the median and lateral sections is doubtless due to the presence in the former of the thick, soft decidua. From the fifth to the eighth week the thickness of the decidua is about equal to that of the uterine wall. In the gravid uterus, therefore, the isthmus is less resistant to the touch within this area than in the lateral sections where no decidua intervenes between the examining fingers. Relative softening of the median section and compressibility throughout the entire width of the isthmus are not obliterated during uterine contractions.

Hegar's Sign.—Generally, when clearly defined, Hegar's sign may be regarded as absolutely diagnostic. With extremely rare exceptions no pathological condition counterfeits it. While it is true, as certain writers have affirmed, that some degree of compressibility of the isthmus may be present in those very rare conditions hydro- and hematometra, it is not typical. It is not so well defined in proportion to the size of the corpus as in the gravid uterus of similar dimensions. The body of the uterus, too, is more nearly globular than in gestation and it presents the characters of a tense cyst.

In a single instance in the writer's experience Hegar's sign was found perfectly developed in a case of puerperal metritis. Unlike certain other observers he has never met with anything closely resembling it in other forms of metritis. This sign may be looked for after the fifth week. Unfortunately in a small proportion of cases, perhaps ten per cent., it cannot be detected even as late as the eighth. In many women the difficulties of the bimanual examination make this sign of little or no value. Sometimes in such cases it may be elicited by the rectovaginal method, the uterus being well drawn down with traction forceps. In any case failure to find it is not conclusive. Yet Hegar's sign is by some writers given first rank among the earlier evidences of uterogestation. My own estimate is that, while it is not inferior when fully made out to any of the other signs of the early months, its practical value is less than that of the shape and consistence of the corpus for the reason that it is not so readily appreciable.

Differential Density of the Corpus.—Another indication of pregnancy at the period in question is the differential density of the corpus (Braun, Hübl, Winter, Schauta, Dickinson, and others). The impregnated ovum lodges in the uterine mucosa most frequently at a point near one cornu. So long, therefore, as it only partially fills the cavity of the uterus, the corpus presents an asymmetrical shape. One horn or lateral segment of the body of the uterus is denser to the examining fingers than is the other. Whether the ovum is contained in the denser or the softer segment is a matter of dispute. Braun refers the situation of the ovum to the softer horn, Schauta to the harder. A longitudinal sulcus may be made out between the thicker and the thinner cornu upon either the anterior or the posterior wall or upon both, and it may extend over the fundus.

Braun has sometimes been able to recognize the difference in size and density of the two halves of the gravid uterus within a few days after the first skipped period (Trans. Vienna Obstet. and Gyn. Soc., *Centrbl. f. Gyn.*, 23, No. 17). The difference in consistence of the two lateral segments he has generally found most marked upon the anterior wall. He thinks the longitudinal sulcus may, like Hegar's transverse fold of the posterior wall, be an artificial product, the result of irritation incident to the bimanual examination. He calls attention to the possible utility of these signs in deciding whether the ovum has been expelled in abortion and in the diagnosis of early ectopic gestation.

Hübl induces contraction of one-half of the uterus by massaging one horn. The density of the opposite half remains unchanged. This difference in the consistence of the two horns developed by manipulation is characteristic of pregnancy. Such irregular contraction cannot be induced in metritis.

Schauta alluded to the irregularity in the shape and density of the gravid uterus in the report of his first thousand laparotomies In one case he had operated under a mistaken diagnosis of ectopic gestation, the uterus having assumed a marked bicornate shape, owing to the presence oi an ovum in one horn. In the experience of both Schauta and Braun one segment of the gravid uterus has been found so tense and hard in comparison with the other as to lead to the erroneous diagnosis of myoma

Shape and Density of the Corpus as a Whole.—Most easily available of the signs obtainable in the early months by the bimanual examination are marked softening and lateral expansion of the body of the uterus, and it is especially to these peculiarities of the gravid uterus in the early months that it is desired to direct attention. An apparently almost jelly-like consistence of the corpus, together with a width often two or three times its anteroposterior thickness, makes the diagnosis of uterogestation. The softening may be so great that it is only with difficulty that the borders of the upper segment can be mapped out by conjoined manipulation. In no other condition than pregnancy is the softening so marked. This character alone, when pronounced, may safely be taken as proof of normal gestation. No pathological condition counterfeits it. As already observed it is only partially developed before the fifth or sixth week. Again, it disappears toward the end of the third month, owing to distention of the uterus by the growth of the ovum. Between these two periods there is no other evidence of pregnancy which equals in diagnostic value anteroposterior flattening and consequent broadening of the corpus.

It must be remembered, however, that both these conditions disappear during uterine contractions. They are available, therefore, only when the uterus can be caught between contractions. Repeated examinations at short intervals may be necessary. When the uterus is not primarily contracted it soon becomes so under manipulation. During contraction the shape and density are entirely changed. The width of the uterus is less; the density is greater, though not so great as in the non-gravid state; the body assumes an irregular ovoid shape; the anterior wall presents the form classically described as that of a pot-bellied jug. Upon the latter characters which are presented only by the partiality or firmly contracted uterus much stress is laid in the textbooks. Yet, they are inferior in diagnostic value to the peculiar softness and great transverse width of the corpus which characterize the intervals between contractions.

Pregnancy and Myoma.—The presence of myomatous growths seriously complicates the diagnosis during the period contemplated in these remarks. An edematous fibroid in the uterine wall may closely simulate pregnancy in so far as relates to the characters of the uterine tumor.

On the other hand a gravid may be mistaken for a myomatous uterus if palpated during the height of a contraction. This mistake has frequently been made by surgeons. Here Hegar's sign and the diminished resistance of the median section of the isthmus may serve to differentiate. Both are present in nearly all cases of uncomplicated uterogestation by the end of the sixth or seventh week. They are absent in the non-gravid myomatous uterus.

Every gynecologist knows how closely the healthy gravid uterus and the myomatous uterus may resemble each other even under ocular inspection.

The foregoing signs may be utilized during operation for confirming or disproving the diagnosis when the abdomen has been opened for a supposed myoma. Obviously the isthmus uteri may be interrogated with more ease and certainty through the abdominal incision than by the usual clinical examination.

In pregnancy coexistent with interstitial myoma these changes at the isthmus will seldom be found. Their presence or absence in the pregnant myomatous uterus will depend on the situation of the morbid growths. When the tumors do not involve the isthmus the same changes may be present in that portion of the uterus as in uncomplicated gestation. Yet the bimanual examination of the uterus for pregnancy is greatly embarrassed by large myomata in any situation.

DIAGNOSIS OF DISEASES OF THE BILIARY PASSAGES.[1]

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In this paper I shall confine my study to a general consideration of the signs of diseases of the biliary bladder and ducts, and shall indicate the relations of these symptoms to such diseases, giving their diagnostic significance and value. I shall likewise show the significance of the physical signs brought out by the careful examination of the patient and discuss these in relation with the subjective symptoms.

Of all diseases of the various organs by which mankind is afflicted few are attended by such definite symptoms which make their diagnosis at one time very easy and at another most difficult. Diagnosis of gall-bladder disease requires in most instances minute observation, keen perception, mature reflection and logical judgment, or in other words the highest qualities of pure reasoning. It is only in few instances that the average clinician can come to a quick conclusion. This is not to be wondered at when we consider that gall-bladder disease is not, as a rule, attended by any characteristic symptoms or pathognomonic signs, that the gall-bladder, by its anatomical situation, its juxtaposition to organs in which disease is common, is frequently an object of diagnostic neglect, whereas, owing to the frequency with which it is involved in some one or other pathological process, it should be the first to be considered in the mental process of exclusion, a method which is very valuable in diagnosis.

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[1] Read before the Society of the Alumni of Bellevue Hospital, March 5, 1902.

The most pronounced signs of gall-bladder disease are the same which are the most marked in disease of the organs in its neighborhood; hence for the recognition of gall-bladder diseases a thorough knowledge of their underlying pathological processes is a *sine qua non.* Without it the finest diagnostic acumen, the keenest perceptive powers are of slight avail. With it not only may a reliable diagnosis be made of a disease of the organ itself, but a most probable conclusion of the condition of the rest of the organ and its ducts. In fact, for the needs of treatment, the surgeon to whom the most of cases of gall-bladder disease are referred, is entitled to demand more than a general diagnosis; he may justly ask for a special diagnosis of the conditions. With the recent advance in our knowledge of cholelithiasis, it is not enough for the internist to say that a patient is suffering with gall-stones; indeed he ought not to resent being called upon for the special pathological diagnosis underlying his general one of cholelithiasis. Of course, such a special diagnosis may not be made in all instances, but he may not infrequently conclude as a special diagnosis, for example, that the gall-stones are in an undisturbed gall-bladder with the cystic duct patent; or again, that an acute purulent cholecystitis with a pericholecystitis and local peritonitis are the concomitant features, or that an obstruction to the common duct is due to a carcinoma of the head of the pancreas. Of course, you may say that an exploratory laparotomy will reveal the true conditions and that the diagnosis of the clinician when he attempts this may often be found wrong. Nevertheless, it should be the object of every well-trained clinician to determine by all the powers which he possesses the special conditions underlying these diseases so that there shall be no need of turning over to the surgeons for exploration, on the one hand, those cases which clinical experience ought to teach would never be benefited by surgical means, or, on the other, to submit patients with medicinally remediable disease to the no small dangers of a laparotomy.

Before proceeding to the consideration of specific diagnosis it will be to our advantage to consider the definite symptoms of which we spoke in our introductory lines, to analyze each and to suggest their diagnostic value and significance.

The only common subjective symptom of gall-bladder disease is pain. The objective signs, independent of those elicited by the examiner, are vomiting, jaundice, swelling in right hypochondrium, and fever, with or without chills. Not one of these symptoms is distinctive of disease of the gall-bladder; each and all may be absent or they may be found just as often in diseases of the viscera in the immediate neighborhood of the gall-bladder. And yet under certain conditions these signs may be most suggestive and directly indicate gall-bladder disease. These conditions necessitate an intimate acquaintance with previous manifestations of disease in the patient. Hence, in no province of clinical medicine is an accurate anamnesis so essential. They likewise presuppose a most accurate and minute examination of these symptoms in all their details as to character, site and intensity. Finally, and most important, is the interpretation of these symptoms in the light of the data which the physical examination by inspection, palpation and percussion reveal.

Let us consider these symptoms *seriatim:*

Pain is the most prominent symptom of cholelithiasis. Its degree of intensity determines to a considerable extent the underlying pathological feature of gall-bladder disease; thus, when slight and unaccompanied by jaundice, it may be indicative of an evanescent serous cholecystitis; when intense and associated with exquisite tenderness so that palpation is almost unbearable, one should suspect an intense suppurative cholecystitis even though jaundice, tumor and fever be absent.

Let us remember that the pain of gall-stone colic is not occasioned in all instances by the attempt of a stone or stones to wander from the gall-bladder. This, I believe, is rarely the cause, except in acute obstruction. I would attribute the attack in most instances to an inflammatory condition, a cholecystitis. That colic frequently occurs without an obstruction or the impaction of a stone in the ducts has been repeatedly demonstrated by surgeons. When such impaction occurs it is usually the effect of the inflammatory process in the gall-bladder by which the bladder becomes distended and its sensory nerves irritated. In acute obstruction of the choledochus the colic is most probably due to the advance of the stone, especially while it is passing through the tortuous cystic duct and through the papilla in the duodenum.

The character, its site, its relation to an empty stomach or to the ingestion of food and drink are points which will differentiate a gall-stone colic from the pain of an ulcus ventriculi.

The appearance of *jaundice* in cholelithiasis indicates that it is not to be attributed to a local affection of the gall-bladder in most instances. Exceptionally, jaundice has been present when the gall-bladder alone was diseased. It may be said that jaundice occurs in gall-stone disease relatively seldom, much less frequently, I believe, than has heretofore been generally supposed. It is especially important to discover whether it appeared immediately after the first attack of pain, how long it continued, what was its intensity and whether this varied at times. The intensity and the varying character of the jaundice determine the question whether there is a chronic choledochus obstruction due to a stone or to a tumor, for in lithogenous choledochus obstruction the jaundice almost always constantly changes in hue, varying in depth from lighter to darker and to lighter again, and even entirely disappearing; while in obstruction due to pressure of a tumor it constantly increases in intensity as a rule. Occasionally in tumor of the duodenum involving the papilla, jaundice of varing intensity occurs. Such a case came recently under my observation. An inquiry as to the varying presence and absence of bile in the feces will assist in arriving at a conclusion.

It may be stated also, as a general rule, that icterus is absent in inflammatory conditions of the gall-bladder. In fact, in about 80 per cent. of all gall-stone cases icterus does not appear. Therefore when icterus is present, it is wise to look for disease either of the liver or of the biliary passages other than cholelithiasis, unless one has evidence that the jaundice is due to an extension in the ducts of the inflammatory process of a gastroduodenitis or that it is the result of an acute obstruction of the choledochus associated with cholecystitis. In the last case the jaundice disappears with the passage of the stone through the papilla into the duodenum.

Fever.—This is observed very frequently in gall-stone disease and when of intermittent form and associated with jaundice it indicates, as a rule, a stone in the common duct. It may be associated with chills and give the picture of a malarial quotidian, tertian and even a quartan type. Charcot, who first called attention to this in gall-stone disease, named it "hepatic intermittent fever." By some authors this form is supposed to be indicative of a choledochus obstruction by a stone in the ampulla of Vater. One should not forget, however, that the association of fever with chills or the presence of high temperature without chills may accompany an ordinary attack of gall-stone colic, or may be indicative of an infectious inflammation of the gall-bladder or its ducts. Nevertheless, as a general rule, it should be borne in mind that if the fever be of a continuous and remittent form in such cases, one of these conditions may be present—a diffuse purulent cholangitis, a pyelophlebitis or a liver abscess.

Much may be learned from a careful anamnesis when we bear in mind that sex and age are suggestive diagnostic data, in that gall-stones are far more common in females than in males, and much more frequent after twenty years of life. In fact, the frequency is in direct ratio with the number of years after twenty. Obesity is an associated condition in many cases of cholelithiasis. Previous diseases, especially the infectious diseases, prominently typhoid, predispose to cholelithiasis and cholecystitis. Menstruation, pregnancy, the puerperium favor the occurrence of attacks of hepatic colic. Gastroduodenitis is not infrequently associated with cholangitis, and repeated attacks predispose to cholelithiasis.

Physical Examination.—Next to a careful anamnesis, the examination of the patient offers the most reliable data in forming a diagnosis of disease of the biliary passages. An examination which does not include that of all the viscera and which limits itself to the structures in the right hypochrondrium will not infrequently fail to reveal the diagnostic data which shall determine what form of disease of the biliary passages is present. Analysis of the stomach-contents should not be forgotten in cases in which there is a suspicion of carcinoma. The stools should be inspected and the presence or absence of bile noted. I do not think that sifting of the stools gives much information. Of course, when a stone is found in the passed feces, the diagnosis is assured, but this occurs seldom, either because the stone became softened and disintegrated by the intestinal secretions or because it has merely changed its site without having successfully been forced into the bowel. It is self-evident that the urine should also be examined, especially for biliary coloring matter and for albumin.

Most important knowledge is gained by the physical examination of the patient's right hypochondrium, especially by inspection, palpation and percussion; diagnostic data of no small value are derived from them. Thus, by inspection, especially in thin subjects, we may notice a prominence over the region of the gall-bladder, a distended gall-bladder which immediately suggests an occlusion of the neck of the bladder or of the cystic duct, and would exclude in the vast majority of cases a chronic obstruction by a stone in the choledochus. Up to quite recently it had been taught that a distended gall-bladder and jaundice were characteristic signs of an obstruction of the common duct by a stone. Courvoisier, who was the first to analyze by careful study these features, proved indubitably that distention of the gall-bladder was the exception in lithogenous choledochus obstruction. This is now so well established that the fact is known as *Courvoisier's law.* If you can see and feel a distended gall-bladder, whether or not there be jaundice, you may conclude in the largest number of cases that it is not a stone in the choledochus which produces the condition. On the other hand, a distended, palpable gall-bladder, and the presence of jaundice are the usual concomitants of obliteration of the lumen of the common duct by the pressure of a tumor outside of the duct, for example, either of the duodenum or of the head of the pancreas. In the latter cases, when a cachexia and an ascites are accompanying features, showing portal vein obstruction; a diagnosis of carcinoma of one or the other or of both of these organs is justifiable.

Again, inspection may show in addition a depression near the epigastrium which would suggest a dragging upon the pyloric end of the stomach or duodenum by adhesions from a recent or old pericholecystitis. This conclusion will be strengthened if we find that the stomach is distended, which inspection not unfrequently alone substantiates without the necessity of finding its outlines by fillling the stomach with gas through a stomach-tube. Or inspection may disclose an absence in the gall-bladder region of intestinal peristalsis or a reverse peristaltic movement in that locality, whereupon it would be fair to assume that an inflammatory process had caused adhesions of the gall-bladder to the colon.

Palpation furnishes equally, if not more, reliable information upon which to base a diagnostic conclusion. This should always embrace in addition a bimanual examination by which the size, shape, regularity and tension of a distended gall-bladder can best be determined. In addition the nature of the free edge of the liver may be elicited, and the condition of that organ as to size, smoothness and regularity of contour may be established. A hydrops of the gall-bladder or an empyema from a suppurative cholecystitis appears as a globular or ovoid tumor.

Too strict regard cannot be paid in the absence of a distended gall-bladder to a resistance which palpation may elicit in the region of that organ, because a rigid abdomen is suggestive of an inflammatory process beneath. Nor should one forget that an extension from the edge of the liver in the same locality does not always mean an enlarged gall-bladder. Riedel has shown that in some cases of cholecystitis, the enlarged gall-bladder has pulled down an extension from the liver substance in the shape of a lobule of liver tissue which may cover the gall-bladder or in the event of the subsequent atrophy of the gall-bladder and its retraction high up under the liver, may be mistaken for the gall-bladder. This lobule is known as Riedel's lobe. I mention it here prominently that this condition may be thought of before concluding that a palpable gall-bladder is present.

A nodular condition of the gall-bladder, hard and painful on pressure associated with jaundice, is suggestive of carcinoma of that organ. Should the same conditions coexist in the liver with signs of ascitis and cachexia one may infer that secondary invasion of the liver by carcinoma has taken place.

A crepitating mass in the gall-bladder, feeling like nuts in a pouch, indicates a patent cystic duct with a gall-bladder free from fluid. In a distended gall-bladder, whether due to a serous or a purulent cholecystitis, gall-stones cannot be felt to crepitate by the palpating fingers.

When an ovoid or pear-shaped tumor is felt in the right hypochondrium one should notice whether or not it is painful on pressure and whether it is accompanied by jaundice and an enlarged liver. If not at all or only slightly painful, and not accompanied by increase in the size of the liver and jaundice, a diagnosis of hydrops of the gall-bladder is most probable. An exquisitely painful enlargement of the gall-bladder, even though unaccompanied by fever, which is more frequently present than absent, indicates a suppurative cholecystitis.

Returning again to the consideration of a collection of pus in the gall-bladder as the result of a purulent cholecystitis, we would like to say that such a collection does not always give rise to a palpable tumor. In fact in recurrent inflammations of the gall-bladder a contraction of the walls of the organ may supervene and though the contents are purulent, no tumor may be felt. One must then take into consideration the character of the fever, the presence or absence of pain and tenderness, the anatomical distribution of pain, and the presence or absence of jaundice to come to a conclusion. These are perhaps the most difficult of all gall-bladder affections to diagnose.

Again, palpation reveals the presence or absence of tenderness, the significance of which was considered when we spoke of the diagnostic importance of pain.

Percussion is of importance in fixing the upper and lower borders of liver dulness especially, and giving knowledge of the size of this organ. Enlargement of the liver occurs in cholangitis and in chronic choledochus obstruction, while its consistence it at the same time increased. We spoke of the local enlargement of the liver over the gall-bladder as the result of a cholecystitis, which caused a tongue-like projection to extend downward, known as Riedel's lobe.

When, with other signs of disease of the biliary apparatus, fever, either of a continuous or of a remittent type, associated or unassociated with chills is present, an examination of the blood, especially the estimation of the number of white blood-cells, is desirable. A polynuclear leucocytosis of high grade would suggest the presence of an infectious process or of a purulent accumulation in the biliary organs.

Special Diagnosis.—As a rule, diseases of the gall-bladder are readily diagnosed; sometimes, however, diagnosis is most difficult on account of the absence of physical signs and of definite clinical symptoms. It will be wise to differentiate, before taking up the diagnosis of the special diseases of the biliary apparatus, the conditions with which gall-stone colic may be counfounded.

Gastralgia.—There can be little doubt that many of the so-called cases of gastralgia or stomach cramp are really attacks of gall-stone colic. Gastralgia, as a rule, is attended by physical alterations in the region of the stomach such as retraction or distention, with the stomach outlines at times visible on inspection. An attack of gastralgia terminates with the eructations of copious amounts of gas and the pain is usually relieved by pressure in the epigastrium. On the other hand, in gall-stone colic the pain is rendered much more agonizing by pressure over the right hypochondrium and epigastrium. Of course, later in the attack, the appearance of jaundice, of a tumor on the right hypochondrium or of gall-stones in the stools would decide the cause of the pain in favor of gall-stones. A chill and fever are much more common with the latter than with gastralgia.

Ulcer of the Stomach or of the Duodenum.—When there is a history of pain, hemorrhages from the stomach, and tarry stools there is no difficulty about deciding the cause of these conditions any more than there would be if we found icterus, or hepatic enlargement and stones in the feces. One can, however, in a large number of cases make the diagnosis early from the following data: The pain in ulcer is almost immediately increased after the ingestion of food; it rarely occurs while there is no food in the stomach and is therefore less at night; while in gall-stone colic the paroxysm usually starts in at night some hours after a meal; at any rate it occurs independent of meals. The pain in gastric ulcer, as a rule, does not invade the right hypochondrium and is especially localized in the epigastrium and the left hypochondriac region, while in gall-stone colic the greatest pain is over the region of the gall-bladder. Ulcer is accompanied by a previous history of gastric symptoms and by hyperchlorhydria; gall-stone colic comes on suddenly without premonition and the contents of the stomach do not show a decided increase in free hydrochloric acid. Ulcer is more frequent in the thin and anemic female, while cholelithiasis is especially observed in the obese and plethoric. The presence of an ovoid tumor in the right hypochondrium with colic excludes ulcus ventriculi and favors the diagnosis of colic due to a cholecystitis.

Intestinal Colic.—In this the pain is usually centered about the umbilicus, is not as agonizing as in gall-stone colic and is relieved by the passage of flatus and by firm pressure.

Renal Colic is seldom confounded with gall-bladder colic, as the direction of the pain in the former radiates downward along the ureters and to the testicles and glans penis; it is sometimes accompanied by diminished excretion of urine, which is often dark colored and not infrequently contains mucus, and blood. Hematuria does not occur with gall-sone colic.

Malarial Fever.— When speaking of the significance of fever in gall-bladder disease, I called attention to a form simulating by the periodicity of chill, fever and sweat, the type of a quotidian, tertian and quartan intermittent fever. These symptoms without further examination of all the data furnished by the patient would naturally suggest a malarial infection. A close inquiry will elicit the fact that they may be the expression of a chronic choledochus obstruction from the impaction of a stone, or the concomitants of a suppurative cholecystitis, of a diffuse pyelophlebitis, of an abscess of the liver, or of a diffuse suppurative cholangitis. Even the enlarged spleen of malarial infection may be present with the other infectious processes of the gall-bladder and its ducts. When in doubt the examination of the blood for plasmodium and diagnostic test doses of quinine hypodermically should not be forgotten.

Peritonitis may be confounded with gall-stone disease at times, but it is readily distinguished by the posture of the patient, the permanent as opposed to the paroxysmal character of the pain and by the presence of the costal type of respiration.

Appendicitis has been diagnosed by some of the very best clinicians and on operation an acute cholecystitis has been found instead. The error is more easily made when the appendix is situated higher up than usual or when the pain from the cholecystitis is referred lower than the right hypochondrium. There is usually no jaundice in cholecystitis, a fact which renders a differential diagnosis still more difficult. The presence of local tenderness and of a tumor in the right hypochondrium and the anamnesis showing either a previous history of jaundice or a previous infectious disease, such as typhoid, would point strongly to a cholecystitis.

Ileus may be an obligatory result of an acute cholecystitis, or it may simulate gall-stone disease. When a pericholecystitis results from an acute cholecystitis, adhesions of the intestine and the gall-bladder may occur. During this process the intestine may become paralyzed by the inflammatory process in its peritoneal covering and give rise to constipation and obstinate vomiting, even vomiting of stercoraceous matter. In fact, ileus has been more than once diagnosed, when a cholecystitis was the cause of the obstruction and the instituted laporatomy revealed the true condition of affairs.

Too much attention cannot be placed upon the previous history in such suspected cases. Inquiry should embrace the questions of previous attacks of colic, of jaundice, of painful swelling in the right hypochondrium, all of which, when present, would indicate the true source of the intestinal obstruction.

Hypertrophic hepatic cirrhosis of Hanot can readily be mistaken for chronic obstruction of the choledochus, due either to an impacted stone or to pressure from without. In both there are varying degrees of jaundice, and enlarged liver and fever; in both pain may be absent. The greater enlargement of the liver and the more continuous type of fever are distinguishing features of Hanot's cirrhosis as likewise are youth and a slight degree of jaundice. In hypertrophic cirrhosis the stools are not clay-colored as they usually are at some time during the course of a chronic choledochus obstruction. In the former the spleen is enlarged and hard.

Acute Pancreatitis.—It is well known that this commonly arises as the result of the entrance into Wirsung's duct of irritating chemical or bacterial substances. On this account it is not uncommonly associated with cholelithiasis and especially in chronic forms of impaction in the lower part of the choledochus, either in the ampulla of Vater or at the duodenal papilla, when the bile behind the obstruction becomes dammed back into the pancreatic duct, or infecting organisms enter. At times the co-existence of acute pancreatitis may be suspected when, after a history of gall-stone colic with jaundice, a frightful pain appears in the epigastrium and extends over to the left, and signs of profound collapse supervene. It is almost impossible sometimes to determine its existence.

As a disease not coexistent with cholelithiasis it may be differentiated by the more agonizing nature of the pain, which is referred to the epigastrium and to the left, sometimes increased by pressure over the ribs covering the spleen; by the accompanying cyanosis and the sudden and complete collapse. It is well to bear in mind that the same symptoms may be due to a perforative peritonitis from perforation of the gall-bladder following a cholecystitis. Here, however, the symptoms would be first referred to the right hypochondrium.

A suppurative pancreatitis, while usually the result of an acute hemorrhagic inflammation of the pancreas, may occasionally develop slowly and give the picture of an obstruction of the choledochus either by a stone or by pressure from without. It may be accompanied by chills, epigastric tenderness and rigidity of the abdominal muscles without a tumor being palpable. Here the presence of free fat in the stools and perhaps a glycosuria would render a diagnosis possible.

Chronic intestinal pancreatitis sometimes results from gall-stone disease. It is strongly to be suspected (an absolute diagnosis is rarely possible) if glycosuria supervene after a history of gall-stone colic, jaundice of persistent and varying type without palpable gall-bladder and accompanied by chills and fever; in other words, by the symptoms showing a calculous obstruction of the lowest part of the choledochus.

If Opie's recent find of a fat-splitting ferment in the urine of a case of acute pancreatitis mentioned by Thayer in an article in a recent issue of *American Medicine* be confirmed by its presence in the urine in other cases, a valuable differential clinical sign will have been established.

Carcinoma of the head of the pancreas, the usual site of carcinomatosis of this organ, may well be confounded with choledochus obstruction due to stone. The absence of a history of colic, the ever-increasing intensity of the jaundice, the persistent increasing pain in the epigastrium as opposed to the paroxysmal pains of gall-stone, the presence of a hard tumor in the epigastrium and of a distended gall-bladder, the presence of free fat in the stools and of a glycosuria, the wasting and the cachexia would favor the diagnosis of cancer of the pancreas.

Hydrops of the gall-bladder may be mistaken for fluid tumors of the kidney or for ovarian cysts. While hydrops cystidis felleæ may develop without marked signs such as pain, tenderness, and jaundice, it is readily recognized by a palpable tumor which may be freely movable in a circular manner from a fixed upper center, the neck of the gall-bladder. The tumor itself begins at the edge of the liver and does not extend over the liver surface; it descends and ascends with respiration and by these signs differentiates itself from the tumors of the kidney and ovary.

Signs of chronic choledochus obstruction may arise from the impaction in the duct of parasites such as round worms, distoma hepaticum, etc., conditions so rare that they require only passing mention as possible causes of the existing conditions under discussion.

Carcinoma of the Biliary Passages.—While the diagnosis of cancer of the gall-bladder in most of the cases is not easy, its distinguishing signs being a hard, nodular, painful tumor of the gall-bladder of rapid growth, with developing icterus and cachexia and later with the involvement of the liver and glands at the portal fissure, and the appearance of ascites, the diagnosis of carcinoma of the ductus choledochus is most difficult and uncertain. Here we have all the signs of a chronic obstruction of the choledochus which obtains either from an obturating stone or from a tumor of neighboring organs. It is only by the process of exclusion that we may hope to differentiate.

Infectious Icterus.—To this class belongs the systemic invasion of the bacillus proteus fluorescens and bacillus pyocyaneus and includes yellow fever, relapsing fever, and pneumonia. The first, known as Weil's disease, is differentiated from disease of the biliary organs by the acute abrupt onset with chill, intestinal disturbance, early jaundice, albumin and casts in the urine, sometimes hematuria and continuous high fever. The signs of sepsis with enlarged softened liver and spleen are early apparent. Often petechiæ are found scattered over the body surface. In suspicious cases blood-cultures should be made with the possibility of finding the infecting organism.

EMPYEMA OF THE GALL-BLADDER.[1]

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Empyema of the gall-bladder may be briefly defined as that form of infective cholecystitis, acute or chronic, which is characterized by the presence of pus in the cavity and by various changes in the walls and peritoneal covering of the organ. Something more than the mechanical irritation of a stone in the cystic duct must be called upon to explain these severe forms of cholecystitis, and this is to be found in the infection caused by the multiplication of germs, derived most often from the cavity of the adjoining intestine. Although Riedel holds that in the majority of cases, the inflammation is due solely to the foreign body, this view is not held by Naunyn, Kehr and many other distinguished authorities, and is in distinct opposition to the findings in most of the animal experiments recently made to determine this and other points in question. It is reasonable to believe, then, that the degree and character of the infection are determined by the number, virulence, and character of the invading germs; and that the character and extent of the resulting cholecystitis, whether it be acute or chronic, seropurulent, purulent, or gangrenous, depend upon these factors, taking into consideration, of course, the individual and local resistance in each case, and the modifications produced by previous attacks of inflammation.

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[1] Read before the Association of Alumni of Bellevue Hospital, March 5, 1902.

As Kehr very graphically puts it, "The inflammation often resembles a straw fire which only a moment bursts forth and quickly burns out, before the patient notices anything of it. But frequently it spreads like a conflagration in the neighborhood of its original site, seizing upon the peritoneum, the liver, the pancreas, and does not spare sometimes even widely-distant points as the heart, the lungs, the brain, and the kidney."

The different degrees of inflammation in cholecystitis, show themselves most clearly in the condition of the mucosa of the gall-bladder, which may be slightly swollen or noticeably thickened, marked here and there with points of decubital ulceration, or covered with a diphtheritic membrane, or totally gangrenous. As a result of these ulcerations, strictures and perforations may occur, and fistulæ, hemorrhages, and duct obliteration may naturally ensue. When the cystic duct remains completely obstructed the gall-bladder, excluded from the biliary system, becomes a cyst with serous or purulent contents—chronic hydrops, serous or purulent. The inflammation generally extends from the mucosa to the walls of the gall-bladder and causes marked thickening and edema of the serous and muscular layers, local peritonitis, purulent pericholecystitis, and leads to the formation of adhesions with the omentum and the neighboring viscera. It must of course be remembered that perforation is by no means necessary for the development of these conditions, and that local peritonitis in acute seropurulent cholecystitis, develops frequently by infection through the inflamed but intact wall of the gall-bladder.

From the experiments of Ehret and Stolz, it would appear that in certain animals at least the normal bile possesses to a high degree the important property of overcoming rapidly a not too virulent infection of the gall-bladder, if the outflow of the bile through the ducts remain unrestricted. If, then, we accept this and the theory that the degree of inflammation depends upon the degree and character of the infection, other things being equal, we can readily accept the dictum of Kehr that certain cases of acute cholecystitis may be followed by a complete *restitutio ad integrum,* if the cystic duct remains patent.

Although in most cases of purulent cholecystitis the infecting agent is derived directly from the intestine via the common bile-duct, it is highly probable, and indeed experimentally proven, that in some cases the infection is derived from the blood-stream, *i. e.,* hematogenous. Bile taken from fresh cases of acute cholecystitis almost always contains micro-organisms, whereas that obtained from old cases is not infrequently sterile, a fact explained by the early death of the bacteria as a result of the inflammation initiated by them. Naunyn states that the bacterium coli as a rule very quickly succumbs and that the cholecystitis and cholangitis set up by this organism do not generally become purulent unless an added infection with staphylo- or streptococci occurs. He believes, moreover, that the two forms of infection may often be differentiated, and urges upon physicians the importance of doing so; although he admits that in some cases of coli infection the local and general symptoms are very severe and not perhaps easily to be distinguished.

When infection of the gall-bladder takes place in a case of cholelithiasis, the mucosa swells, the cystic duct becomes obstructed and the organ becomes more or less widely distended with an exudate; this in turn gives rise to the pain, the tenderness, and the appearance frequently, of a palpable tumor which are characteristic. Up to a certain point these attacks of cholecystitis may be regarded as conservative, and in some cases actually curative, in that they may aid in the expulsion of the stones and lead to a natural cure. Unfortunately, these attacks are most often ineffective as regards expulsion and become often more frequently recurrent; or in other instances lead only to the extrusion of a large stone from the cystic duct, which becomes later impacted in the choledochus. In the recession of a mild attack of inflammation in the gall-bladder the swelling subsides, the transudate is discharged through the cystic duct and the normal circulation of the bile is reëstablished. In the severer forms, as of empyema and the phlegmonous inflammation, ineffaceable traces are left behind in the walls, the ducts and the overlying peritoneum.

Kehr, from an enormous operative experience in the field of gall-stone surgery, has arranged the cases of purulent cholecystitis in the following groups, as an aid to diagnosis, and based upon observed anatomical conditions.

1. Acute cholecystitis in a relatively healthy gall-bladder. In this form there is usually a a large stone in the vesical neck. The walls of bladder are thickened and the exudate therein is muddy or purulent.

2. Acute cholecystitis in an already contracted gall-bladder, which has been frequently the seat of inflammatory attacks. In this class, the cystic duct is generally obliterated, there are numerous adhesions, and the exudate is generally small in amount and slimy or purulent in character.

3. Empyema of the gall-bladder. Stone in the cystic duct. Pus in the bladder cavity. Adhesions. These cases are either the result of an acute serous cystitis or are from the first acute empyemas.

The cases of the first group represent the cases of acute seropurulent cholecystitis which are often seen, and which give rise to a well-marked acute cholecystitis and fairly characteristic objective signs. There is generally a palpable tender tumor to be felt below the right costal arch at the normal site of the gall-bladder. Jaundice is rare. Severe pain in the epigastrium, often extending through to the back, may be complained of. Marked sensitiveness to pressure over a considerable area is generally present. The general condition varies with the severity of the case and may be from fairly good to extremely bad. The hyperacute cases may show signs of cholangitis. There is often a circumscribed peritonitis, *i. e.,* pericholecystitis. Fever in these acute cases is generally present, but may be wanting. No increase in the size of the liver unless cholangitis be present. Generally in these cases there is no expulsion of stone. If, however, the attack of cholecystitis end with the passage of the stone, acute choledochus obstruction generally arises. Diagnosis in this class is generally easy. Confusion with appendicitis is possible, but may generally be avoided by careful attention to the form, mobility, tension and situation of the tumor, etc.

In the second group the tumor is often not palpable on account of its situation, high up beneath the liver. The pains are about the same as in group 1. The symptoms frequently change. Jaundice is rare, and if present is inflammatory rather than obstructive. The stones are not generally expelled. The diagnosis in this group is more difficult, on account of the absence of data from palpation. Exact attention to the history is the best guide to diagnosis. In cases of this type without feelable tumor, where general infection is severe and colic but slightly pronounced, a diagnosis of typhoid malaria or sepsis may easily be made.

In the cases of the third group the symptoms in the beginning are the same as in group one. Later the fever may be wanting. The other symptoms are sometimes entirely wanting, except for the presence of the characteristic tumor, or, more often, there are the pains in the region of the stomach. There is no jaundice, no expulsion of stone. The tumor is generally smaller than in simple chronic hydrops serosa. Diagnosis is generally easy. The tumor is movable if not too adherent and is generally tender on pressure. If perforation occur, the symptoms of a perforative peritonitis are added. In the beginning the tumor formed by an empyematous gall-bladder is very painful and tender. Later, however, this tenderness may become less, or, in some cases, may nearly or quite disappear.

Treatment.—In all cases of acute suppurative cholecystitis, as well as in the chronic empyemas, surgical treatment is clearly indicated, and in many instances imperative. An examination of the conditions found in these cases of severe gall-bladder inflammation should convince us of the dangers of repeated attacks and the futility of medical treatment, except in so far as it is palliative.

In the *first* group cholocystotomy with more or less prolonged drainage has generally proved effectual and is the measure clearly indicated. Early operation should be done to save unneccesary damage to the adjacent peritoneum by the spread of inflammation.

In the *second* group the indications for operation are none the less clear, though oftener longer delayed, perhaps, on account of the difficulty of early diagnosis in the absence of a tender and palpable tumor. Here cholecystostomy is again the operation to be employed in most of the cases, although cystectomy is undoubtedly proper in carefully-selected ones.

In the *third* group, the more or less chronic empyemas, incision and drainage is clearly indicated, but, as Kehr has shown, it may in some cases be necessary to do a cystectomy in addition, as when the stone is too firmly impacted in the cysticus to make possible its removal through expression into the gall-bladder. In selected cases a cystectomy, as recommended by Kehr, is undoubtedly a rational procedure.

As it has been abundantly demonstrated that all the severer forms of cholecystitis, as embraced under the subject of this paper, are serious and often dangerous affections, the unwisdom of delay and the ineffectiveness of purely medical treatment ought to be clearly understood. These cases ought to be recognized by the attending physician perhaps more commonly and promptly than is generally the case. All surgeons who are called upon to operate in these delayed cases will recognize very clearly the force of this statement.

Early cholecystostomy, when the disease is limited largely to the gall-bladder, is a safe, rational and effective procedure; and one which has the confidence of surgeons here as well as abroad. It is based upon sound principles, and achieves very definite and satisfactory results. Delay in operation, on the other hand, may mean more frequently recurring attacks of inflammation, more adhesions, involvements of neighboring viscera more or less serious, and finally an operation which is often dangerous, always difficult, and frequently ineffectual.

THE SURGERY OF GALL-STONES.*

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ALTHOUGH my contribution to this subject must necessarily be confined to the treatment of gall-stones, I cannot help alluding to the enlargement of the field of biliary surgery to include to a great extent the surgery of the pancreas, through the demonstration by Mayo Robson of the causative influence of gall-stones and diseases of the biliary passages in the production of pancreatitis. Also chronic appendicitis seems to be frequently associated with gall-stones, the assumption being that it is probably causative by infection of the biliary passages through the portal circulation. Ochsner,[1] in eighteen cases of gall-stones operated upon by him in the early part of last year, found the appendix diseased in six, *i. e.*, 33 per cent. He therefore concludes that the appendix should be examined, when feasible, during operations for gall-stones.

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*Read before the Association of Alumni of Bellevue Hospital.

In regard to the surgical treatment of gall-stones I cannot help feeling that much missionary work is necessary in order that earlier diagnosis may be made and that cases may be subjected to interference before complications have arisen. One cannot but be struck by the severity of the conditions present in cases coming to operation in this city. I reiterate "in this city," for apparently fewer cases are operated upon in this city than in other cities of this country, and consequently the conditions found in the cases are more advanced and serious.

For illustration I shall briefly cite the conditions present in the cases operated upon by me during the past eighteen months at Roosevelt and St. Luke's Hospitals. These are eleven in number and, I think, are fair examples of cases ordinarily found in the surgical wards of the hospitals of this city.

Case I.—Cholecystitis. Small contracted gall-bladder filled with calculi. Difficult operation. Cholecystostomy. Recovery.

Case II.—Cholecystitis. Gall-bladder extending 9 cm. below liver, containing large quantity of calculi from 2 mm. to 2 cm. in diameter and a large quantity of mucoid fluid not bile-stained. Impacted stone in cystic duct. Adhesions to duodenum. Cholecystectomy without opening gall-bladder. Closure of abdomen without drainage. Rapid, uneventful convalescence.

Case III.—Suppurative cholecystitis. Abscess of liver. The gall-bladder contained twelve calculi of moderate size and had ruptured into liver substance, the abscess pointing at the upper surface of the liver. Removal of calculi through incision of liver abscess. Drainage. Cure for eight months, then returned with empyema of the gall-bladder pointing in upper part of scar. Two stones were found impacted in the cystic duct and removed, having escaped observation in the operation eight months previously; one was 1x2 cm. the other 6 mm. in diameter. Recovery.

Case IV.—Suppurative cholecystitis. Gall-bladder 18 by 9 cm., entirely surrounded by adherent omentum, contained about a liter of pus and numerous seed-like calculi. Cholecystostomy. Recovery.

Case V.—Stone in common duct. Gall-bladder much contracted, empty. Numerous adhesions. Movable stone in enlarged common duct, 1x2 cm. in diameter, choledochotomy, suture of duct. Healing without leakage. Discharged cured on twenty-third day.

Case VI.—Cholecystitis and stone in common duct. Gall-bladder contracted to hard mass, 8 cm., from free border of liver and embedded in dense cicatricial tissue and could not be identified until excised. It contained about 50 small calculi. A small stone which was in the common duct was pushed into duodenum by a probe passed through the divided cystic duct. Operation exceedingly tedious and difficult. Free discharge of bile for three days; healing except for small sinus in nine days. Recovery.

Case VII.—Cholecystitis. Gall-bladder contracted; 7 cm. from free border; contained six stones about a cm. in diameter. Cholecystostomy. Recovery.

Case VIII.—Suppurative cholecystitis. Gall-bladder 18x6 cm., much thickened, contents pus and calculi; 29 calculi were removed, 3 of which were a centimeter in diameter; the last removed from deep in cystic duct was followed by a gush of bile. Cholecystostomy. Recovery.

A month later, the sinus refusing to heal, a stone was discovered with probe deep in cystic duct, as it could not be removed through the sinus, the abdomen was opened at the inner side of the scar the gall-bladder was found contracted and a round stone 2 cm. in diameter was removed by incising cystic duct. Recovery.

Case IX.—Cholecystitis; cholangitis; adhesion to duodenum of gall-bladder; gall-bladder contained two calculi, one result of old perforation into duodenum; stricture of duodenum; cicatricial or inflammatory obstruction of common duct; deep jaundice. The gall-bladder was small and contracted and its wall seemed to form part of the duodenum, which was opened in separating it. The gall-bladder ducts and the duodenum were matted together with adhesions. The common duct contained tarry bile but no palpable calculus. The stricture in the duodenum just admitted the tip of the index. Duodenoplasty. Cholecystostomy. Free discharge of bile. Death on sixth day from sepsis and exhaustion.

Case X.—Rupture of gall-bladder. In this case the gall-bladder had been ruptured a week and a cystic collection of thin bile had formed on the right side reaching down below the pelvic brim and had been walled in with thin adhesions. On the day of admission these had ruptured causing a general abdominal extension, which was followed by a chill and rise of temperature. The fluid in the abdomen was clear and of a pale yellow color, there was a moderate fibrinous peritonitis walling in the primary collection. There was a ragged aperture 5 mm. in diameter in the fundus of the gall-bladder which contained small faceted stone and one 2.5 cm. in diameter. It did not appear inflamed. Cholecystostomy. Abdominal lavage and drainage. Death on fourth day from peritonitis.

Case XI.—Cholecystitis. Gall-bladder embedded in the liver, only one-third of its periphery apparent. Wall thickened. Size 10x5 cm. A stone could be felt in a dilatation of the cystic duct. Cholecystectomy. Recovery.

Case XII.—Obstructive jaundice, probably due to a new growth in the head of pancreas which was very hard and nodular. The patient was almost *in extremis* and a cholecystostomy was followed by death in twelve hours.

A thirteenth case was recently operated upon by Dr. W. T. Bull and myself. The gall-bladder was normal in size and its walls were moderately thickened. It was surrounded by moderate adhesions and contained a stone 2x1.5 cm. besides some pasty material. The common duct contained an irregular soft calculus at least 3 cm. in diameter and a quantity of smaller soft concretions above the main calculus. The calculus was movable and there was subsiding jaundice. Choledochotomy with suture of the duct and cholecystostomy.*

In five of these cases the gall-bladder was much contracted, thickened and adherent, and difficult to drain or remove. Three were advanced cases of common duct calculus. Three had empyema of the gall-bladder, and in two of these complete operation could not be carried out, secondary operation becoming necessary. One had a much distended gall-bladder without marked adhesions, which was easily removed. In one the distended and thinned out gall-bladder had ruptured causing a local and finally a spreading peritonitis. In one a stone had evidently at some previous time ulcerated through the wall of the gall-bladder into the duodenum causing a stricture of the latter and finally an obstruction of the common duct had resulted from contraction, causing advanced cholangitis and cholemia. One, although not a case of cholelithiasis, had had obstructive jaundice for four months and had reached a condition in which treatment was unavailing. An autopsy in this case might have recealed a chronic pancreatitis which could have been relieved if proper treatment had been instituted earlier.

In all these cases there had been a history of repeated attacks with the exception of one case of suppurative cholecystitis in which there had been only one attack four months previously. The history in most of them had extended from one to four years. The fatal cases were both elderly, fat women; in one a peritonitis was already present and in the other advanced jaundice and cholangitis.

The mortality of complicated cases is necessarily high, while that of early and uncomplicated cases is low. In regard to this point Kehr's statistics are of interest. Kehr[2] up to November, 1900, had performed 547 operations for gall-stones; of these 125 were complicated by either peritonitis, purulent cholangitis, cirrhosis of the liver or carcinoma of the liver, pancreas or ducts, and the mortality was 47 per cent. Of the uncomplicated cases there were 204 cholecystostomies or cholecystendyses with four deaths, 2 per cent.; 121 cholecystectomies with four deaths, 3.3 per cent., and 97 choledochotomies with six deaths, 6 per cent.

Riedel[3] reports 100 cases of cholecystostomy and cholecystectomy with two deaths, both cholecystectomies. Loebker,[4] thirty-seven cholecystostomies with no deaths and eighty-seven cholecystectomies with only two deaths. These statistics show a very low mortality and the cases must have been favorable. They are quoted simply to show that in good hands and in favorable cases the mortality of gall-stone operations is not high. Present statistics, however, are not particularly valuable inasmuch as the cases are not properly classified.

Stones in the common duct may be considered as unfavorable cases, the mortality ranging from 6 to 20 per cent. with different operators.

The moral is to operate early while they are still in the gall-bladder. Biliary colic in the majority of cases is due to cholecystitis and operation should be done as soon as a diagnosis of cholecystitis is made. As McCosh[5] says, an early exploratory operation is better than to contend with the dangers of cholemia.

Maurice Richardson[6] claims that early operations are unattended by mortality.

The status of gall-stone surgery to-day resembles in many ways that of appendicitis ten years ago. There is the same delay in diagnosis; and the same hesitancy in treatment. With earlier diagnosis and treatment the medical profession and the public will, I am sure, acquire the confidence in the surgical treatment of gall-stones that they now have in that of appendicitis; and, as in appendicitis, more interval operations will be done.

There is another point in the surgery of gall-stones that I wish to bring before you, namely, Shall we resort to cholecystectomy in many cases now treated by cholecystostomy? Cholecystectomy first came into favor in France and has lately been performed more and more frequently by German and American surgeons. For instance Kehr, in his later operations, does cholecystectomy unless drainage is indicated. In this country Gibson and Mayo were among the first to promote the operation and it is now performed regularly by a number of operators. There are several conditions in which cholecystectomy is indicated as the operation of choice, and these are (1) gangrene of the gall-bladder and suppurative inflammations endangering its vitality; (2) neoplasms of the gall-bladder; (3) injuries of the gall-bladder, and (4) permanent obstruction of the cystic duct. In the following conditions it is not so imperatively indicated: (*a*) contracted gall-bladder which cannot be attached to the parietal peritoneum for drainage, and (*b*) calculi impacted in the cystic duct which cannot be removed except by incising the duct.

Cholecystectomy should not be performed in cases in which drainage is indicated, namely, (1) when there is uncertainty as to the patency of the common duct; (2) suppurative cholecystitis without sloughing; (3) cholangitis; (4) when the duct is sutured after choledochotomy and the gall-bladder can be easily and safely drained; (5) it should not be attempted in cases in which prolongation of the operation would lessen the patient's chances, as when jaundice and bleeding are present or there is impairment of vitality by disease, age or condition.

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*This patient has since recoved.

Eliminating these cases in which cholecystectomy is indicated or contraindicated, we have left a class of cases which are mostly interval cases and of which the following case lately observed in the service of a colleague at Roosevelt Hospital is a good example. The patient, a woman twenty-five years of age, was admitted in the latter part of December, 1901. Seven years before she had had a severe attack of intermittent pain without jaundice lasting off and on for two months. In the following six months she had several mild attacks. Her next was three years later when she had an attack of very severe pain lasting for two hours and accompanied by collapse, nausea and vomiting. She was then well until April, 1900, when a series of attacks of pain commenced with more or less continued jaundice lasting until April, 1901. In December, 1900, she found four small calculi in the stools. The pain ceased in April, 1901, but slight jaundice continued till December, 1901, when after severe pain and increased jaundice lasting for two weeks, she passed, on December 18, an irregular stone the size of a pea and her pain and jaundice disappeared. Operation on January 2, 1902, revealed a somewhat enlarged but practically normal gall-bladder with no adhesions, containing bile and six calculi ranging from 4 to 8 mm. in diameter. There were no calculi in the ducts. Bacteriological examination of the bile from the gall-bladder revealed the colon bacillus. In such a case which operation should be done, cholecystostomy or cholecystectomy?

In deciding this question let us consider some of the advantages that cholecystectomy offers as compared with cholecystostomy. These are (1) a radical cure of the cholecystitis and gall-stones by the removal of the nidus of infection and calculi. (Kehr reports recurrence of pain in 6 per cent. of cases treated by cholecystostomy); (2) avoidance of biliary fistula; (3) a perfectly clean operation with no soiling by infected bile; and (4) avoidance of adhesions. As an objection to cholecystectomy, its greater mortality, as shown by statistics, at once presents itself. In considering this the fact must be taken into account that cholecystectomy had been chiefly performed for serious conditions such as gangrene, maligant disease and contracted gall-bladders buried in adhesions. Cholecystectomy in favorable cases such as the one just presented is an easy and rapid operation, and, I think, a safer operation than cholecystostomy with its attendant dangers of infection. In one of my cases (Case II.), although the bladder was distended so that it reached 9 cm. below the free border of the liver and a large calculus was impacted in the cystic duct, it was removed entire with great ease and rapidity. The duct was divided between ligatures without a drop of fluid being spilled, the mucous membrane of the stump was destroyed with the cautery, the peritoneum sutured over it and the abdomen closed without drainage.

The only question to my mind is as to whether the gall-bladder serves any purpose in our vital economy; if not, why should we hesitate any more to remove it in proper cases than we do the appendix?

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LITERATURE.

[1] Phila. Med. Jour., 1900, p. 652.
[2] Gall-stone Diseases, 1901 (Translated by W. W. Seymour).
[3] Quoted from Keefe, Boston Med. and Surg. Jour., Vol. CXLVI., p. 157.
[4] Münch. med. Woch., 1898, p. 40,
[5] Jour. Amer. Med. Assoc., 1899, p. 697.
[6] Quoted from Deaver, Annals of Surgery, Vol. XXXIV., p. 165.

MEDICAL PROGRESS.

PATHOLOGY.

The Bladder in Spinal Diseases.—In a contribution to the pathology of the urinary bladder in tabes and other spinal-cord diseases, W. HIRT (Ctblt. Krankh. d. Harn.- und Sex.-org., Mch. 22, 1902) calls attention to the fact that the histories of many cases record a hypertrophy of the vesical muscles. The author believes that there is either a functional hypertrophy of the detrusor muscle, or that the bladder-wall has become thickened by connective tissue hyperplasia due to a chronic cystitis. In a number of persons who as the result of a spinal paralysis are subject to disturbances of micturition, usually termed bladder paralysis, there is found at autopsy a true hypertrophy of the detrusor musculature, without any mechanical obstruction to the flow being present. The reason for this hypertrophy has long been a matter for dispute, as comparatively little is known of the dependence of the bladder function on the nerve centers. The most common belief is that if retention come on in the course of a spinal disease, it is a result of detrusor paralysis; if incontinence be present it is due to sphincter weakness or to paralysis. The internal sphincter can be voluntarily relaxed, but the action of the detrusor is purely reflex and involuntary. The author believes that detrusor paralysis can only be regarded as the condition in which the reflex motility of the muscle has entirely disappeared. If a muscle be no longer motile, how is its hypertrophy to be accounted for? It seems that the detrusor hypertrophy is functional, yet this is inconsistent with the idea of a paralysis. It is difficult to define the conception of sphincter paralysis, as the sphincter possesses two kinds of motility, reflex contractility and voluntary relaxation; "paralysis" must be limited to an abeyance of the former, "spasm" to a lack of the latter. This would necessitate a revision of the conception of sphincter paralysis in certain cases of spinal disease. The writer concludes that there are some patients in whom symptoms of a bladder paralysis existed during life (*i. e.*, retention and incontinence), but in reality neither detrusor nor sphincter was affected. In explanation of the considerable bladder disturbance which occurs in many cases of spinal disease, the author divides the latter into two classes, those which come on suddenly and those which develop slowly. If a sudden disturbance take place, as with a trauma, the bladder is suddenly surprised and the detrusor of course has no opportunity to hypertrophy before the next filling of the bladder. The muscle contracts in the usual manner, but is unable to overcome the sphincter, as this can no longer be voluntarily relaxed, either because the sense of a filled bladder cannot be communicated to the brain or because the motor paths containing the specific nerve fibers of the sphincter are destroyed. Retention then results. If the bladder be not regularly emptied, the non-compressible fluid contents prevent contraction of the detrusor, it stretches and secondary atrophy and paralysis quickly supervene. If catheterization be regularly done, this may be obviated. The detrusor contracts oftener, longer and more energetically than in the normal condition, for catheterization is not done so often as the act of ordinary urination. In this way the detrusor dilates, but does not hypertrophy. In a few weeks it can often overcome the sphincter or reflexly cause its relaxation. The second category of cases includes those in which the nerve centers are gradually destroyed by degenerative processes, as in tabes. As the ataxia of striped muscle in tabes is considered due to disturbed centripetal influences, it may be possible to assign a similar agency to the disturbed bladder function. In reply to the idea that smooth muscles possess coördinating paths, the author states that the characteristic of coördinated movements is that they are not congenital, but acquired. Normal urination is therefore like standing and walking, the result of training. And, moreover, just as beginning disturbances of coördination in striped muscle can be overcome by concentrated attention by the patient on the muscular act (as in the glances downward by the ataxic in walking), so one may assume something similar for the bladder muscles. The involuntary micturition first taking place during sleep can thus be explained. By this disease of the centripetal coördination fibers in some ataxics the innervation is so disturbed that the internal sphincter does not open at the moment when the detrusor contraction has reached its normal height. The detrusor then overexerts itself, becomes hypertrophied and dilated; but, as these disturbances are gradually developed, it can still accomplish its function. If a functional hypertrophy of the detrusor be reached and there be an increasing amount of residual urine, the detrusor can often, by a very energetic contraction, suddenly overcome the sphincter and involuntary urination results. With this disturbance of harmonious action, the sphincter may close before all the urine is voided, or the detrusor does not contract at the moment or not strongly enough, when the sphincter is opened, so that micturition is often incomplete. In summing up the bladder disturbance of certain cases of spinal-cord disease, it appears that they occur mostly in disease of the posterior columns (*i. e.*, tabes and the closely-related paralyses) and in transverse myelitis when the posterior columns are involved.

Sarcoma of the Vagina.—W. ROGER WILLIAMS (Jour. of Obst. and Gyn. Brit. Empire, Apr., 1902) cites but two cases of sarcoma of this region out of a series of 2,648 consecutive cases of tumors in women, which would show that the condition is one of comparative rarity. A special feature of the malady in this locality is the large number of cases which originate in infancy, many of them being congenital. It is also met with in adults, but less frequently. Gatti tabulated 27 primary sarcomata of the vagina, 17 of which were in infants. These tumors often contain various unusual structures, to wit, striped muscle elements, islets of epithelium, leiomatous tissue, and telangiectatic blood-vessels, and they are relatively often congenital. Growths of this kind are commonest in early infancy, very few being met with after the fifth year. Although the disease is first noticed at birth in only a comparatively small proportion of the total cases, it seems probable that most of these early-life vaginal sarcomata are of congenital origin. The only operative treatment of any avail is total extirpation of the vagina, together with uterus and adnexa, by abdominal section. Several instances of congenital and early-life polypoid formations in the vagina have been met with, and these are often erroneously referred to as examples of congenital "myoma." The adult type presents the same general features as in other hollow organs, such as the uterus. Mucosal and parietal varieties may be recognized, according to the seat of origin of the primary tumor. The former is much the rarer. It presents a mass of soft, bossed-out growths, projecting from the infiltrated mucosa; or is a solitary circumscribed tumor, which may be pedunculated or sessile. In the practical variety a well-defined, firm tumor, varying in size from a walnut to an apple, is usually met with; but exceptionally the disease presents a dense, nodular infiltration. Mucosa sarcomata are generally soft and vascular, small, round and spindle cells predominating in their structure, which often comprises considerable myxomatous areas. Severe hemorrhages are common with this type of the disease. The parietal tumors are generally mixed celled fibrosarcomata, in which spindle cells predominate. It seems probable that some sarcomata of this kind may originate from vaginal "fibroids." The great majority of these sarcomata in adults originate from the lower part of the vagina, not far from the introitus. Quite as many originate anteriorly as posteriorly. The disease seldom spreads to the uterus; but the pelvic and inguinal lymph-glands may be involved. Recurrence is generally rapid after local ablation; hence early radical removal of the whole diseased area is the treatment indicated. When the disease is limited to the lower part of the vagina, vaginal extirpation by transverse perineotomy may suffice (Olshausen). Sarcomatous disease may be secondary to disease elsewhere, *e. g.*, uterus, vulva, etc. Mucosal uterine sarcomata and deciduoma malignum (syncytioma) are specially prone to disseminate in the vagina.

Bacilli Coli Communis.—An extended review of the literature as to the part which this bacillus plays in human infection and accounts of his own observations led A. J. LARTIGAU (Jour. Amer. Med. Assoc., Apr. 12, 1902) to submit the following conclusions: (1) The bacilli coli communis is widely distributed in the normal body and in nature; it is present as a saprophyte in the alimentary canal, in the common bile-duct, on the skin near the mouth and anus, in the anterior portion of urethra and vagina. (2) It may, under what seem normal conditions, be carried during life from the intestine to healthy normal viscera, more especially to the liver and kidneys through the portal circulation. Similarly it may reach the systemic circulation. (3) Agonal and postmortem invasion of the tissues is common, with or without apparent lesion of the mucous membrane of the intestine. (4) The virulence of the bacillus is influenced by changes in the physiological activities of the intestine and growth in new-host environment. (5) The rôle of this organism as a primary inciting factor in infection is infrequent. It claims attention as a secondary invader of tissues previously occupied by other micro-organisms. (6) The bacillus may induce inflammatory lesions, mainly suppurative, in the body tissues generally; the infection may originate in the intestine. (7) Its rôle in acute inflammatory lesions, especially of the appendix, peritoneum, and urinary passages, has been overestimated. It commonly acts as an accessory factor. (8) It is a factor of importance in the incitement of cholelithiasis.

Pathogenesis of Balantidium Coli.—The Balantidium coli, which was discovered by Malmsten in 1857, is an infusorium of the order Heterotricha. A normal inhabitant of the large intestine of swine, it is also occasionally found in the human being, but only when associated with dysentery, diarrhea or other intestinal disease. It probably enters the human body by infection from its normal host, the pig. Mitter has collected from the literature a series of 28 cases, 9 of which were reported by Scandinavian writers. HARLOW BROOKS (N. Y. Univ. Bull. of Med. Sc., Jan., 1902) has made a large series of examinations of the dejections of Bellevue Hospital patients without once discovering the organism. It is probable on account of its origin that it could be more easily found in country districts. Strong of Manila found that this parasite plays an important rôle in the causation of the tropical dysenteries prevalent in the Philippines. Inasmuch as the parasite has never been described associated with intestinal disease in any other animal than man, Brooks believes it worth while to report an epidemic of dysentery caused by the Balantidium and occurring among the apes of the New York Zoölogical Park. Autopsy in a fatal case showed an ulcerative colitis with resulting anemia and localized peritonitis. Myriads of the Balantidium coli were present in the mucoid material covering the mucosa of the colon. A careful search was made for ameba coli, but none were found. Brooks disagrees with those writers who deny that the Balantidium coli is a pathogenetic agent. Since the chance of infection in cities is slight, one must look to country practitioners for further careful study of this parasite in its relation to ulcerative dysentery in man.

Contribution to the Study of the Bacillus of Syphilis.—A variety of observations on normal subjects and patients recently and remotely infected with syphilis lead M. JOSEPH and PLORKOWSKI (Berl. klin. Woch., Mch. 31, 1902) to the conclusion that a specific bacillus is to be found in living spermatozoön of recently infected individuals. The bacilli in question could not be demonstrated in ejaculations containing no spermatozoa, nor were they to be found in the spermatozoa of normal individuals, nor in those subjects examined three, four and ten years after specific infection. Experiments in animals were unproductive; attempts were made to infect mice, guinea-pigs, puppies and swine, but no apparent influence of the subcutaneous and intraperitoneal injection of the cultures could be observed. The authors describe in detail the microscopical and cultural characteristics of their bacillus and promise a further report on the presence of the bacillus in hard chancres, mucous patches, condylomata lata, gummata, and in the blood of syphilitics.

Relation of Caseous Pneumonia to Miliary Tuberculosis.—A morphological distinction between caseous pneumonia and miliary pulmonary tuberculosis in the sense that the tubercle shows only interstitial, interalveolar proliferation analogous to granulation tissue, while the pneumonia is a manifestation of a superficial, intra-alveolar fibrinous and cellular exudation, is not granted by P. BAUMGARTEN (Deutsch. Arch. f. klin. Med., Vol. 73). A careful examination of both types of pulmonary lesions caused by the tubercle bacillus shows that the difference is but a quantitative one and that both processes, to some degree, take place in each.

Cause of Nephritic Edema.—That the explanation of the edema of Bright's disease by changes in the vessel-walls with increased permeability for the serum is not sufficient for all cases is a well-known fact. A. KAST (Deutsch. Arch. f. klin. Med., Vol. 73) injected the sterile serum of healthy and of nephritic patients into dogs and measured the amount of lymph flowing out of the thoracic duct. In all of the latter cases there was an increased production of lymph, provided that the patient from whom the serum was taken suffered from subcutaneous edema. The explanation is that certain unknown substances form in the blood which are capable of stimulating the capillary endothelium or the cells engaged in elaborating the lymph.

Pathogenicity of the Bacillus Pyocyaneus.—That the bacillus pyocyaneus is not so harmless as was hitherto thought is again proven by the case reported by O. SOLTMANN (Deutsch. Arch. f. klin. Med., Vol. 73). In a thirteen-year-old boy who come to autopsy with the diagnosis of septic pneumonia, softened foci of cheesy consistence and yellowish-green color were found in the lung tissue. A bacteriological examination revealed the presence of the bacillus pyocyaneus in almost pure culture. The source of the infection could not be settled absolutely, but the fact that the patient was the son of a cab-driver and spent much of his time in stables makes it probable that the germs were inhaled.

Tetanus and Subcutaneous Injections of Gelatin.—The recent adaptation and application of gelatin by subcutaneous injections to various diseases of the blood mark what is probably a long step forward in medicine. HOCHHALT and DE HERCZEL (La Sem. Méd., Mch. 19, 1902) report an observation of a woman, afflicted with Banti's disease, on whom a splenectomy was done. The patient had previously had frequent hemorrhages, so that the operation was preceded and followed by subcutaneous injections of a boiled two-per-cent. solution of gelatin in water as a preventive. The immediate results of the operation were favorable, but on the seventh day the patient began to show peculiar sensations and irritation, which later in the day developed into the characteristic symptoms of tetanus. The attack was fatal notwithstanding an injection of antitetanic serum. This fact agree with the researches in the bacteriological laboratories of E. Levy, H. Bruns and Schmiedicke, namely, that the gelatin of commerce may contain the bacilli of tetanus. Moreover, L. Deusch examined the gelatin used by the two observers. In both cases, after it had been boiled for five minutes, colonies of opaque, anaerobic, sporiferous germs were found. His conclusion is that boiling for five minutes is not sufficient to sterilize the gelatin, and that boiling must be maintained for fifteen minutes in an autoclave at a temperature of 105 or 106° C. For still greater security he recommends adding before sterilization a small quantity of culture of the bacillus subtilis. Since this micro-organism is more resistant than that of tetanus, it will be possible to employ without fear any gelatin which after standing for two or three days produces no colonies whatever. Unfortunately, the mechanism of hemostatic action of gelatin is still far from being completely explained, and it cannot at this time be stated whether or not such action would be checked by subjecting it to prolonged heat at a temperature above 100° C.

Pathology of Shock.—It is generally conceded that the predominant factor in shock is a paresis of the circulatory system, especially of the heart and arteries, but the explanations of the clinical phenomena have never been satisfactory. E. BOISE (N. Y. Med. Jour., Apr. 12, 1902) urges the belief that the essential condition in shock is a profound disturbance of the entire vasomotor and sympathetic systems, but that it is in the nature of a hyperirritation rather than a paresis. The disturbing influence may reach the centers either from direct irritation of the abdominal sympathetic system, by crushing injuries of the skeletal nerves, or from sudden fright. The clinical aspect of mental shock differs from that of traumatic shock only in point of duration. There are the same sudden pallor and clammy perspiration, the same abolition of the pulse to a greater or less degree, the same relaxation of sphincters and the sense of absolute physical prostration. The pallor of shock has been designated as livid, because the arteries and arterioles are comparatively empty, the veins remaining filled. This condition of arterial anemia cannot be explained by an arterial paresis. It is believed that stimulation of arterial vasoconstrictors coincides with a stimulation of venous vasodilators and *vice versa*. Thus, the clinical manifestations of shock would be easily explainable. The stumbling-block to the acceptance of this theory has always been the fact that arterial tension is extremely low in shock and one always expects it to be high when the vasoconstrictors are stimulated. It has frequently been demonstrated, however, that when death occurs during shock the heart is frequently found in a state of tetanoid contraction, and during the rapid irregular contractions the left ventricle is not allowed to fill and hence the arteries are not distended. Experimentation has, furthermore, shown that severe stimulation of the cervical sympathetic causes cardiac spasm and low-tension pulse. The mental and physical prostration can also be explained by this arterial anemia. The symptom of profuse and clammy perspiration can be explained only by the theory of hyperirritation of the sympathetic system and especially of the secretory fibers. The diminished secretion of urine also depends upon the arterial pressure and supply of blood to the kidneys. The arterial anemia here again affords a rational explanation. Uncomplicated shock, therefore, is a hyperirritation of the entire sympathetic system resulting in a spasmodic condition of the heart and arteries. The chief remedies used are opium, strychnine, intravenous saline injection, and external heat. Amyl nitrite is suggested as a valuable drug in these cases to relax the spasmodic contraction, but it must be given in doses which would ordinarily prove toxic.

On the Classification of Pathogenic Streptococci.—The pathological importance of the streptococcus makes it a matter of great moment to determine the significance of the morphological differences displayed by streptococci in culture. Several years ago A. MARMOREK (Berl. klin. Woch., Apl. 7, 1902) showed that variations in the size of the individuals forming the chain or differences in the length of the chain could be easily modified by slight alterations in the composition of the culture-medium. This writer asserts that no matter what their morphological differences may be, all forms of pathogenic streptococci possess in common certain bio-chemic characteristics which place them in a single class. First in importance among these qualities are the ability to cause hemolysis in the blood of dogs and the inability of the streptococcus to grow in its own culture filtrate. In the course of his experiments Marmorek utilized streptococci of erysipelas, of puerperal fever, of scarlatinal angina, of pneumonia following measles, of phlegmon, as well as the streptococci found in mixed infections in cases of diphtheria, tuberculosis and influenza. The hemolytic power of the streptococcus of scarlatinal angina is apparently less than that possessed by specimens obtained in other forms of disease. Marmorek is convinced that antistreptococcus serum from a single source will successfully immunize against all forms of streptococcus; this conclusion is based upon experiments on animals. Thus there appears to be no scientific justification for the separation of supposed varieties of streptococci pathogenic in man. On the contrary the streptococci found in human beings are of a single family. Streptococci which for a long time have lived in association with other pathogenic bacteria may undergo morphological changes, but these are not sufficient to influence materially the essential characters or the physiological function of the bacteria in question.

Enzymes in Tetanus Cultures.—By means of a series of experiments M. COLLINA (Gazz. degli Osped., Mch. 30, 1902) believes he has demonstrated the presence in tetanus cultures of two ferments, one fluidizing, the other coagulating. Gelatin became fluid upon the addition of the culture filtrate; Wasserman's fluid (blood serum of horse, distilled water, neutral glycerin, sodic phosphate of casein) was first coagulated, then fluidized. Perhaps the most interesting outcome of these experiments was the partial neutralization of fluidizing and coagulating power through the addition of normal blood-serum to the culture filtrate prior to subjecting these substances to its action. The inhibitory influence of serum from animals vaccinated against tetanus was more marked and in direct proportion to the antitoxic power of the serum.

Cytology of Effusions.—A contribution to the subject of cytodiagnosis is made by BARJON and CADE (Gaz. Heb. de Méd. et de Chir., Mch. 30, 1902) in a paper giving conclusions drawn from 100 examinations of effusions from serous cavities. It was found that the pleural effusion alone presented definite characteristics which could be utilized for clinical purposes; effusions from other serous cavities differing one from the other, and not following any fixed rule. The experience of the authors coincides with that of Widal and Ravaut from which are drawn the three cytologic formulæ: (1) Preponderance of lymphocytes indicates tuberculous pleurisy; (2) of polynuclear cells, inflammatory pleurisy; (3) of endothelial cells, mechanical pleurisy; but marked variations in these formulæ were noted in the early stages of the disease. In a case of tuberculous pleurisy, which was aspirated upon the fifth day, endothelial cells were found, 60 in 100, suggesting mechanical pleurisy; yet inoculation of a guinea-pig with the fluid demonstrated its tuberculous nature. In another tuberculous case, aspirated upon the third day, there were polynuclear cells, 68 in 100, with absence of lymphocytes; aspiration six days later showing polynuclears, 1 in 100, lymphocytes, 58 in 100. Hence, it is seen that the cytologic formula varies with the age of the pleurisy. The authors believe, however, that definite characteristics are established by the third week, from which reliable diagnostic conclusions can generally be drawn.

OBSTETRICS AND GYNECOLOGY.

Prophylaxis in Gynecology.—Prevention in medicine is its highest sphere of usefulness. L. M. BOSSI (La Gyn., Feb. 15, 1902) enumerates the following points in the prevention of gynecological conditions. It is necessary for the profession to apply itself to the importance of teaching the laity the final necessity for care in obstetrical practice. It is necessary not only to save the mother and the child, but so to treat the mother that her genito-urinary organs shall escape unharmed and fit to renew their function. It is necessary for the profession at large to appreciate the justice of special knowledge in the lines of gynecology and obstetrics. Too many of the procedures, while easy, are grave in their possibilities and demand technical experience. The creation of societies devoted to the instruction of women in regard to various important matters concerning themselves would probably be a means of avoiding some of the causes of gynecological invalidism. Books and papers may be distributed, periodical conferences held with the sole purpose in view of teaching them some of the simple laws of health. Mothers must be taught the grave dangers which result to their daughters of infractions of the laws of hygiene, especially at the age of puberty; of irregularities, voluntarily produced, in menstruation, and of the improprieties of conjugal relations. It is probably only by these means that in time such a degree of knowledge will be reached as to decrease the unfortunate number of neurasthenics, neuropathics and similar wretched forms of nervous trouble among women.

Exploratory Vaginal Incision.—Surgery and gynecology have both given their warrant to an exploratory laparotomy when other means of diagnosis are no longer available and the condition of the patient makes it necessary for the attendant to know by direct vision what the pathological process is. The vaginal operation for exploration of the pelvic and abdominal cavities is, however, in the transition stage, many favoring this, but perhaps a greater number preferring the other route for the purpose. G. SPINELLI (La Gyn., Feb. 15, 1902) states that at least for one condition no one can deny its justice and wisdom, namely, suspected ectopic gestation, especially when the symptoms point toward a rupture. He adds that by these means only can one be certain of the presence or absence of this fatal condition, evacuate at once a large hematocele, and check the hemorrhage which might go on to death. As a prophylactic measure against the results of incomplete tubal abortion and as a preventive against rupture at all it must necessarily occupy a high position in the opinions of those who desire to save the lives of their patients.

Myomotomy.—The difficulties which surround the matter of approach to myomata have long been recognized. W. THORN (Ctlblt. f. Gyn., Mch. 15, 1902) concludes as follows: The almost unending variety in which myomata of the uterus appear makes it necessary to individualize in almost every case. In addition to this factor is that which concerns the personal taste of each operator or his ability and experience in either of the two routes, namely, vaginal or abdominal. The vaginal operation has given such surprisingly good results that it should not be limited, but rather extended in its application. It should be employed whenever it is possible to do so.

Suppression of Urine After Labor.—Serious disturbances in the renal function have long been recognized as among the most dangerous complications of gestation, but the physiological merges so insensibly into the pathological that it is far from easy to determine the exact point at which the normal is transgressed and danger begins. R. G. MCKERRON (Jour. of Obstet. and Gyn. of the Brit. Empire, April, 1902) says that when the pathological conditions are brought on by pregnancy delivery usually brings about a normal condition, though in eclamptic cases death may ensue before the functional activity of the kidneys is restored. Complete suppression of urine during pregnancy has not been noted without eclampsia apart from surgical interference. It has followed ovariotomy during gestation (Bland-Sutton). Literature furnished only three instances of uncomplicated postpartum suppression of urine. The writer believes, however, that it is more common than this would lead one to suppose, he having had two cases of complete and one of partial anuria in his own experience during the last three years. In offering an explanation of the causation of this condition one is compelled to rely upon clinical records which are necessarily incomplete in respect to the condition of the kidneys which led up to it. The women are generally under thirty, and this fact may exclude Bright's disease. Two of the six patients were primiparæ; the other four had had evidences of renal inadequacy in their previous puerperal histories. In but one case did the gestation continue to term. In five of the cases the children were stillborn. Altogether the women were fourteen times pregnant, and four times only did pregnancy terminate in the birth of a living child. In four of the women labor was unusually rapid, if not precipitate. Slight accidental hemorrhage immediately preceded the onset of labor in two cases, in one of which it was accompanied by excruciating pain. Total suppression of urine existed in most of the cases for several days without any urgent symptoms. The most uniform and striking symptom was vomiting. The urine when present was of rather high specific gravity and contained albumin and blood. Bond holds that the suppression is due to impaction of calculi in both ureters. McCrae believed that the anuria was due to the absorption of decomposing matter in connection with the dead fetus in utero, which, it was thought, had given rise to blood-poisoning, a conclusion to which, he held, the symptoms strongly pointed. The author thinks that the fetal death and the postpartum anuria depend on a common cause and that this cause is to be found in the character of the labor. Fagge says that shock accompanying rupture of the uterus will produce a temporary anuria. If this be so, it is reasonable to suppose that the intense pains which occur in precipitate labor may produce a great deal of shock, which may be the sole factor in the production of the postpartum anuria. Thus from analysis of the clinical condition present, the following would seem to be the most important factors in the production of the condition. (1) A pathological condition in the kidneys—nephritis. (2) A neurotic temperament; the influence of this is seen in hysterical suppression. (3) The shock incident to an undue rapidity of labor, or arising from excessive pain. These seem in all cases to have been the inciting cause.

Cardiac Disease in Pregnancy and Parturition.—In pregnancy an extra amount of work has to be done by the heart to supply the wants of the uterus. If the heart be diseased in the non-pregnant, Nature tries to remedy the condition by a compensatory hypertrophy, but if the woman become pregnant the extra strain thrown on her circulation will be very liable to upset this arrangement. Something like fifty per cent. of these patients are said to die, but ROBERT JARDINE (Jour. of Obstet. and Gyn. Brit. Empire, Apr., 1902) says that this is too high. Pure mitral stenosis is said to be the most deadly of all lesions. The blood is dammed back into the lungs, which become engorged and edematous, and finally the right side of the heart becomes dilated. With the completion of labor the uterine vessels are engorged, and, if there has not been a large hemorrhage in third stage of labor, a large amount of blood must necessarily be returned to the right side of the heart, which may become engorged and paralyzed. Hart states that the hemorrhage relieves the right heart of the extra work, so that in these cases, if there be no hemorrhage and if the heart be embarrassed, phlebotomy should be performed to save the patient. Next in seriousness to mitral stenosis comes aortic incompetence. Mitral incompetence is not so serious unless very marked. Should a woman with heart disease marry? If the woman has suffered from failure of compensation at any time, no matter whether the lesion be mitral stenosis, aortic incompetence, or both combined, the answer should be decidedly negative. When labor begins, large doses of strophanthus or digitalis should be given. When the os is dilated labor should be terminated. The patient should not be allowed to bear down. During the third stage bleeding should be encouraged. Ergot is contraindicated. Stimulate the heart during the puerperium. Forbid nursing, for this has a bad effect on a damaged heart. The lymphocyte percentage usually exceeds that of the neutrophiles at birth. After the first feeding there is a relative and absolute increase of the neutrophiles (50 to 80 per cent). This gradually diminishes as the effects of digestion wear off and the blood becomes less concentrated, till, in the second week, the lymphocytes are increased as at birth. The percentage of eosinophiles is, as a rule, greater than in the adult blood.

Uterus Bicornis Unicollis.—The influence of this uterine anomaly upon gestation, parturition and puerperium is the subject of a paper by A. BONI (La Rassegna Ostet. e Gin., Mch., 1902). The following conclusions are drawn: (1) Abortion and premature birth are twice as frequent in uterus bicornis as in the normal uterus. (2) Podalic presentation is most frequent, and such cases are apt to go on to term. (3) Shoulder presentations are frequent. (4) Among the most common complications in pregnancy is hemorrhage; this invariably leading to interruption of gestation. Spontaneous rupture of the uterus may occur. (5) In parturition the most frequent complications are (*a*) uterine inertia; (*b*) accidents to the fetus; (*c*) hemorrhage during parturition from placenta previa or other causes. (6) There may be dystocia due to shoulder presentations, anomalies of fetal movements, rupture of the uterus, incarceration of the non-gravid cornu in the pelvis. (7) Puerperal infection is rather more common than in the normal uterus. (8) Eclampsia is frequent and of serious form.

Artificial Sterility and Consumption.—In discussing the subject of the prevention of the spread of consumption by conception and childbirth, Pincus recently recommended that all women afflicted with this disease in a marked form should be castrated. He justified this view also from the standpoint of advantage to the patient in preventing her from conceiving while also combating so serious a disease. A. E. NEUMANN (Ctlblt. f. Gyn., 1902, No. 12), however, takes the opposite and perhaps the better view in the following terms: When women are overtaken by consumption in a severe form, Nature herself protects her from the very dangers of which Pincus speaks by suspending the function of menstruation and thereby the likelihood of conception. This is a fact which is well known among the people at large and to such a degree that most of them regard the return of their periods as a favorable sign or even an indication of recovery from consumption. It is a well-known fact that artificial menopause has more or less mental effect upon women, usually harmful and occasionally in very high degree. Neumann points out that, if in addition to the discouraging knowledge of the existence of consumption in the system, one adds that of unsexing, the chances are that the patients' recovery from consumption will be rendered less likely.

Osteomalacia and Castration.—The number of cases in which removal of the ovaries has been undertaken for the relief of an osteomalacia is comparatively small and every additional case reported should meet with attention. E. HOLLANDER (Deut. med. Woch., Apr. 3, 1902) operated on a patient, a nullipara, thirty-six years of age, who for ten years had been unsuccessfully treated for various rheumatic difficulties. The deformities developed gradually until the costal arch and the iliac crests approximated, the pelvis spread, walking became impossible on account of the secondary muscular paralysis; dyspnœa, pain and general disability were marked. A positive X-ray picture was difficult to obtain, because of the decreased resistance offered by the partially decalcified bones to the light rays. Medical treatment being without results, castration was done. The effects were almost immediate; in a few days the pains and dyspnea disappeared; walking was attempted in two weeks, and at the end of a month this was possible without assistance. The general health also improved. The author believes that the success of this treatment in such cases will lead to a more ready diagnosis and application of the proper means of cure in patients whose sufferings are attributed to rheumatism, arthritis deformans or spinal diseases instead of to the more likely lesions of chronic bone softening.

Gangrene of the Nipples.—This is a rare occurrence during the puerperium. R. VINCENT (Lancet, Apr. 5, 1902) reports a case which appears to have been due to an excessive use of or remarkable susceptibility to orthoform. The delivery and first days of the puerperium were normal. When cracked nipples appeared the usual methods of cleanliness and protection with a shield were employed, with the addition of dusting them liberally with orthoform; in a short time infection appeared, which in general resembled erysipelas, with the exception that the patient was not so ill as she ought to have been with that disease. In a short time both nipples became gangrenous, a line of demarcation was formed and both sloughed off at the base, leaving a granular area through which the milk-ducts could be made to deliver the milk by pressure on the breast. Recovery was subsequently uneventful. The remarkable feature of the case was that, though the nipples were lost, the ducts remained open so that at a future pregnancy the woman will be able to suckle her child with the aid of a shield.

Serum in Puerperal Fever.—Childbirth is a normal occurrence, though a large number of well-known factors may lead to grave diseases, among which puerperal fever is probably the most fatal. M. D. MAKUNA (Lancet, Apr. 5, 1902) reports a case in which he gave the woman subcutaneous injections of antistreptococcic serum. The significant thing about the result is that after these administrations were begun the systemic signs of infection, namely, pulse, temperature and prostration, steadily improved, and that on the third day when the temperature had reached almost normal and without interference the uterus evacuated a large clot of probably highly infected material. One must grant that it would have been better treatment to have evacuated the uterus by a digital curetting at the same time as the injections were begun. In the majority of cases the mere removal of as much of the débris as possible from the womb is a material aid in itself to the patient. However, as indicating the possibilities of combating the germs, this experience with the serum should be remembered.

Fetal Membranes as Therapeutic Agents.—Every one who has lived in among cattle is familiar with the fact that cows, after they are delivered of their young, eat their placentæ. The traveller Gemelli Carrere observed that among the Lakutes, in Russia, the father seized the afterbirth as soon as it was delivered, cooked it, and, together with his parents and friends, regaled himself upon it. Certain birds eat their own eggshells when their young are hatched. L. BOUCHACOURT (L'Obstétrique, Mch. 15, 1902) finds many examples of this custom among men and animals. Among animals the afterbirth may be eaten because it is useful to the alimentary tract. to protect the female from pursuit by other animals or simply as a hygienic precaution. According to the recent work of Latulle and Nattan-Larrier, the placenta is a gland with an internal secretion; hence, animals eat their placentæ that they mav derive some benefit from its internal secretion. Such being the case the author believed that the human placenta might be employed as a therapeutic agent, and experimented upon various maladies with the following results: The placentæ of sheep, dried and powdered, were administered to five women and in every instance the mammary secretion was markedly increased, both in parous and nulliparous women. The chorion in doses of two to three grams a day was found to be beneficial when the breast milk was insufficient. Further, the placenta is mildly laxative. The author thinks it may be possible that the placenta of one species may be toxic for another.

Expulsion of Dermoid Cyst During Labor.—But four cases in which dermoid ovarian cysts have been expelled *per vaginam* have been found in the literature by F. W. N. HAULTAIN (Jour. of Obstet. and Gyn., Brit. Empire, Apr., 1902). In each of these cases forceps were used in the delivery. The literature contains six cases of various other ovarian tumors expelled in the same manner. The main feature in these cases is the management of the labor if obstructed by similar tumors impacted in the pelvis. This is rare, occurring once in 4,000 cases. But if labor be left to the spontaneous efforts of Nature, a maternal mortality of 50 per cent. has been shown. The recognized modes of management may be summarized as follows: (1) Postural reposition of tumor into abdomen. (2) Artificial delivery *per vias naturales* (*a*) without diminishing size of tumor, (*b*) after diminishing size of tumor. (3) Cesarian section and ovariotomy. (4) Vaginal ovariotomy. One should never forcibly drag the child past the obstruction. The best results have been obtained by reposition and simple disintegration with a mortality of 12 per cent. Vaginal ovariotomy has been successfully performed in three cases. This result, if taken in conjunction with the extraordinarily successful termination of these spontaneously expelled, certainly strongly supports such a mode of procedure. Further, should an attempt at extirpation during labor be unsuccessfully made the condition of the patient is no worse than if mere disintegration had been employed, as the tumor may subsequently be removed *per vaginam* or by the abdominal route. The author believes that vaginal ovariotomy is a ready and safe method of treatment. In a certain proportion of cases, operation is contraindicated. In these simple reposition is less likely to do harm than any other mode of procedure. The author considers justifiable the removal of the tumor during labor or shortly after, because of the otherwise high mortality.

Development of the Uterus.—The examination of the uterus in unripe and ripe embryos by H. BAYER (Deutsch. Arch. f. klin. Med., Vol. 73) shows that the organ increases intermittently in size before birth. Its length at five months is 6.8 mm.; at six months, 8.2 mm.; at seven months, 8 mm.; during the eighth and ninth months, 20 mm., and at birth 37 mm. During the fourth, fifth and sixth months there is a general uniformity of shape, but from the seventh to the ninth months the cervix increases more rapidly, though at birth the body seems to be particularly developed. The ovaries also increase in size during fetal life, but not markedly so, and all growth seems to cease at the seventh month. From the first year of life up to puberty hardly any changes occur in the uterus, except occasionally an enlargement of the posterior wall; with the advent of menstruation, however, the organ generally returns to its adult form owing to sudden, rapid growth shortly before the appearance of the first period. In marked contrast to the conditions in fetal life, the development of the ovaries in the post-fetal stage goes hand in hand with that of the uterus.

EYE, EAR, NOSE, AND THROAT.

The Grippe Ear.—The peculiarities of grippe affections seem to be fully as manifest in ear complications as in other parts of the body. M. A. GOLDSTEIN (St. Louis Med. Rev., Mch. 22, 1902) says that an acute otitis media consequent upon a grippe infection is not usually of the simple catarrhal form, but rather ushered in by a symptom-complex and an intensity and a diffusion of pain about the ear which are at once characteristic of influenza. In grippe there is a sudden, intense, deep-seated pain, involving much of the temporal region, with tenderness over the mastoid area and profuse serous effusion into the middle ear. Vertigo and persistent hemicrania are also characteristic of "the grippe ear." Paracentesis should always be done as soon as the diagnosis can be made even if there be very little or no bulging. Free drainage is far more important in these cases than in the simple serous cases. Marked deafness is another important feature beginning very early at times and lasting till the end, or it may come on late and persist most tenaciously in spite of all treatment. The early symptoms of mastoid disease seem to be due largely to a neuralgia so constant in influenza of every type.

Mucin in Rhinology.—In these days one is happily able to bring the products of the laboratory to the service of the patient. No better example can be adduced than the various serums now employed. W. STUART-LOW (Lancet, Apr. 5, 1902) has been experimenting with solutions of mucin in those conditions of the nose, throat and ear which are characterized by deficient or unhealthy nasal secretion. This product mucin acts in the laboratory in the following way: It is highly antibacterial, because solutions of it remain on exposure to the air sterile for a long time. It is also hygroscopic, somewhat like glycerin, only about one-quarter as actively. Professor Arloing has obtained similar results from mucidin, which is a solution of the mucus from red snails. Stuart-Low finds that in practice its action is soothing and emollient, moistening the surface and softening the crusts, thereby facilitating their removal and preventing re-formation, thus correcting fetor. This last is one of the best points in its favor as a local remedy. Through its hygroscopic effect, it restores the sense of smell, filters and warms the air and permits the nose to resume a more normal condition. He uses 5 grains of mucin, 5 grains of sodium bicarbonate, and 1 grain of menthol, dissolved in 1 ounce of sterilized warm water. Sometimes a better solution is obtained by using equal parts of sterilized warm water and sterilized warm lime-water. Application of it is made by a spray, douche, syringe or swab. The spray apparatus should be coarse to obviate clogging with undissolved particles of mucin. Thick crusts demand removal with the swab and massage. Surprising results have been obtained by him in cases which for years had proved obstinate to the great majority of ordinary means of treatment.

Nasal Vertigo and Epilepsy.—Two cases of nasal vertigo and epilepsy are reported by A. JOUSSET (Rev. Hebd. de Laryng., Rh. et d'Otol., Mch. 15, 1902), who also briefly cites Collet's case, thus: The patient felt pricking in the nose followed by sneezing and a sharp pain in the neck; he immediately lost equilibrium and fell forward, extending the hands to break the fall and not completely losing consciousness. Peripheral excitation came from a hypersensitive spur. The author's cases are as follows: Man, twenty-six years of age, has difficulty in breathing, sometimes pricking in the left naris, a little afterward sense of weight in the head and tingling in the limbs. Some nervousness is then followed by slight loss of consciousness. Face at first congested, grows pale and then the patient becomes weak. Enormous deviation of the septum on the left side from a fall twelve years before. Moure's operation was done on the septum to give free respiration. Symptoms all disappeared except some nervousness. Nasal aura. Man, thirty years of age, subject to attacks of epilepsy, relieved till two months before by bromides; since then attacks more frequent and more serious, apparently due to pains in the nose followed by troublesome flow of secretion. Pricking, nervousness and dull weight in head precede the attacks. Hypertrophic rhinitis on left side, atrophic on the right. Galvanocautery reduced hypertrophies and for ten months after the patient did not fall. Nasal aura removed by treatment of hypertrophies of the turbinates.

Neuralgia in Epiphora Cases.—Four new cases of neuralgia associated with disease of the lacrimal canal in women over sixty years of age are given by M. BETTRÉMIEUX (Annales d'Oculistique, Mch., 1902, p. 223) in his communication to the Belgian Ophthalmological Society. The first case was cured by catheterizing and then injecting nitrate of silver, after which the patient remained well for three months. The second, an ozena case, is improving. The other cases improve as the canal is being treated. The author emphasizes the need of being more watchful for nasolacrimal troubles in cases of tic. According to Von Frey's researches, controlled by Fournier and Coutin, there exist in the skin and mucosa special neurons for sensibility to pain. The conjunctiva is richly supplied with them. The lacrimal canal is the most favorable location of the region innervated by the trigeminus for producing radiating pains. The neurons swollen in an inextensible bony canal may easily produce them.

Solutions for Nasal Mucosa.—The pain caused by application to the pituitary membrane of pure water or of water containing a small percentage of minerals is due to the difference between the molecular concentration of the liquid and that of the blood, says Depierris (La Habana Medica, Mch., 1902); therefore the addition of a small amount of salt is advised. Solutions of sublimate, 1 to 1,000 and even 1 to 4,000 are extremely painful to the nasal mucosa, but the addition of sodium chloride in the proportion of 9 to 1,000 renders the solution entirely painless. The same is true of applications of bichloride to surfaces denuded of skin.

Meningitic Ocular Troubles.—In a recent communication A. Leprince (Annales d'Oculistique, Mch., 1902) recalls the case of Leillais, presented to the last French Ophthalmological Congress, which was one of typhoid fever with change of vision and incomplete paralysis of the right motor oculi, followed three years later by meningeal symptoms. The author's case was that of a student, nineteen years of age, who, in 1872, after three days of ill-defined visual troubles, felt violent pain in the nape of the neck and in the coccyx. Acute meningitis developed, with vomiting, relaxed sphincters and paralysis of the right side. Slight improvement in three weeks was followed by relapse with diplopia and divergent strabismus of the right eye. Fifty days after the first symptoms he became blind and remained so one month, not knowing night from day. Then the blindness began to diminish in the left eye. The disease ceased as abruptly as it had begun. A violent crisis, marked by extreme pains in the limbs and head at five o'clock in the morning was followed by the patient rising at half-past nine o'clock and declaring himself well. No relapse followed. Examined four months after the onset, his vision O.D. was found to be uncertain, O.S. $^1/_{12}$. He lived two years in the country and vision gradually improved. Eight years later, in 1880, he went to Paris and consulted Abadie, who advised electricity, which he refused. The author saw him first in October, 1901, when his vision O.D. was $^2/_{10}$, O.S. $^5/_{10}$, and the right visual field less than the left. Under electric treatment vision O.D. increased in one month to $^4/_{10}$. No fundus change. The author remarks that "it is well not to be too pessimistic about post-meningitic ocular complications." It is further narrated that the attack came to this patient suddenly when in good health without traumatism or primary affection. The eye-troubles could indicate meningitis alone. This Terson and Abadie questioned, notwithstanding the patient's circumstantial recollections of the treatment given him.

The author further notes, in his case, that when receiving electrical treatment, if he had had one or two hours less than usual of sleep his resistance ran up to 20 Chardin elements without deviating the galvanometric needle, whereas, in himself, two cells gave him 5 milliamperes (one pole on the neck, the other on the eye). This was a frequent experience. After a good sleep 3 cells gave 5 milliamperes. [It is a question whether these were really cases of meningitis.—Ed.]

Cause of Glaucoma.—The ophthalmoscope has not, as was expected, cleared the mystery of the cause of glaucoma; this is evident by the number of theories promulgated. A new one is advanced by L. Laqueur (Deutsch. Arch. f. klin. Med., Vol. 73). As a result of the examination of rabbits' eyes, secretory fibers, distinct from those innervating the vessels, were discovered, irritation of which causes an increase of the intraocular fluids. This hypersecretion leads to the attack of glaucoma as soon as the mechanism regulating the pressure within the eye fails. The presence of these fibers in man and their probable course is not settled, but it is likely that they run in the cervical sympathetic. The good effects following removal of the sympathetic ganglion in glaucoma would thus find an explanation.

PHYSIOLOGY.

Secretion of the Pancreas.—It has long been known that acid in the duodenum causes a flow of the pancreatic juice, even after nervous isolation of the two organs, as shown recently by Popielski, Wertheimer and LePage. Wertheimer produced the same phenomenon by acid in the jejunum, but not at all in the lower part of the ileum. These authors concluded that the secretion is a reflex, with its centers in the ganglia of the pancreas, or, with the jejunum, in the solar plexus. W. M. Bayliss and H. Starling (Lancet, Mch. 22, 1902) refute this contention in the following terms: Secretion excited by acid in the jejunum cannot be reflex because it occurs after all the nervous elements have been destroyed and after intravenous injections of atropine sulphate. It must therefore be due to direct gland-cell excitation by a substance conveyed to the gland from the bowel by the blood-stream. This substance is not acid. Wertheimer has shown that a 0.4-per-cent. solution of hydrochloric acid injected into the blood does not excite the pancreas. The secretion must be due to a substance produced in the intestinal mucous membrane under the influence of the acid and carried thence by the blood to the gland. Experiment confirmed this conclusion, exposure of the mucosa of the jejunum and duodenum to the action of 0.4-per-cent. solution of hydrochloric acid produced a body which injected in small doses into the blood-stream caused great activity of the pancreas. This body, called *secretin*, is associated with another which lowers the blood-pressure. They are not identical since acid extracts of the lower end of the ileum produce a pressure-lowering effect, but not excitatory. The acid splits off the *secretin* from its precursor, *prosecretin*. The latter is slightly soluble in 0.9-per-cent. solution of sodium chloride and is without influence on the pancreas. The former may be obtained separately from it by boiling with the above salt solution. The acid extract may be boiled, neutralized and filtered without damage, giving in the filtrate primary albumoses and gelatin which may be precipitated by excess of alcohol and ether and have no action on the pancreas. This alcoholic, etherial filtrate contains only a small amount of organic matter, but on evaporating to dryness and taking up the residue with water the solution obtained is as active as the original secretin. This is probably a body of definite composition and small molecular weight. A chemical sympathy between different organs, *e. g.*, the uterus and the breasts, has been assumed, but this is perhaps the first case of direct experimental proof. This acid-duodenum-pancreas mechanism may prove to be but one of a whole class of similar mechanisms. The study of this should materially increase control of the various chemical functions of the body and probably of their diseases.

THERAPEUTIC HINTS.

Prolapsus Ani in Children.—In most cases reduction is accomplished by laying the child across the lap and making gentle pressure upon the tumor with oiled fingers. After reduction the child should be kept upon its back for at least an hour. If the bowel tends to come down with every stool, the buttocks should be pressed together during defecation. An infant should be on its back while defecating, and an older child on an inclined seat; a low chair or any position in which straining is easy should be avoided; constipation demands laxatives. Tenesmus may be overcome with ice-water sponging or by small injections of ice water containing four per cent. of tannic acid. If the bowel comes down very easily, this may be prevented by an adhesive strap across the buttocks. In flabby infants the bowel may protrude in the intervals between defecation, and reduction may become so difficult that it is necessary to apply cocaine and stretch the sphincter with the fingers. A firm pad held in place by a T-bandage is applied after the insertion of a suppository containing gm. 0.015-0.6 (gr. ¼-i) of cocaine. When these measures fail the protruding part may be marked by the Paquelin cantery with lines at intervals of an inch. Strychnine injections may be useful.—L. E. Holt in "Diseases of Infancy and Childhood."

Scarlet Fever.—Throughout the disease a tepid sponge-bath should be given twice a day, followed, when there is itching or desquamation, by inunction from head to foot with cold cream, carbolized vaseline, lanolin, cacao-butter, eucalyptus oil or

℞	Ol. olivæ	4.0	(ʒi)
	Vaselini		
	Lanolini aa. q.s. ad	60.0	(℥ij)

One or two per cent. of menthol added to this will generally relieve intense itching. The pharynx may be treated with boric-acid solution, 1 per cent. carbolic acid in lime-water, peroxide of hydrogen, or

℞	Menthol.	0.2	(gr. ij)
	Thymol.	0.0065	(gr. $^1/_{10}$)
	Ol. gaulther.	0.12	(♏ij)
	Glycerin	15.0	(ʒiv)
	Chlorophylli solut. aquos, q.s.		
	Aquæ ad	240.0	(℥viij)

M. Use as spray or gargle.

Cracked ice or irrigation with hot water to which glycerin has been added promotes the comfort of the pharynx. The best antiseptic is cold water, or occasionally quinine or phenacetin, or the cold pack. Ordinary cases may be given an initial dose of calomel, and

℞	Tinct. ferri chloridi	8.0	(ʒij)
	Acidi hydrochlor. dil	4.0	(ʒj)
	Syr. limonis	30.0	(℥i)
	Aquæ ad	90.0	(℥iij)

M. Sig: A teaspoonful every two or three hours.

Or, as recommended by Yeo:

℞	Liq. ammoniæ acetatis	45.0	(℥iss)
	Potass. chlorat	4.0	(ʒi)
	Syr. limonis	15.0	(℥ss)
	Aquæ	180.0	(℥vi)

M. Sig.: One to three teaspoonfuls every four or five hours.

In case of hard, rapid pulse, tincture of aconite in one-drop doses may be added to the foregoing for forty-eight hours. When the pulse is weak, soft, and of low tension, Holt advises digitalis.—W. T. Corlett in "Acute Infectious Exanthemata."

Gastro-Intestinal Hemorrhage in the Newborn.—In a case in which there were frequent vomiting of blood and blackish stools, L. E. Holt (Archives of Pediatrics, Apr., 1902) administered gm. 0.06 (gr. i) of the saccharated extract of suprarenal every hour for several doses, after which the dose was reduced one-half owing to difficulty in swallowing from the astringent effect on pharynx and esophagus. Twelve hours after beginning the medication, the hemorrhage ceased and did not recur. The child then began to nurse well, and three months later was reported well in every respect. In the author's experience few things have been more unsatisfactory than the treatment of severe gastro-intestinal hemorrhages in the newly-born, the large majority of cases succumbing in a very short time. The solution of adrenalin is possibly to be preferred, as one grain of the extract makes a rather large dose for an infant. In the discussion it was brought out that often the powdered extract failed to stop hemorrhage when an aqueous solution was effective.

Diabetes in Children.—

℞	Antipyrin	10.0	(ʒiiss)
	Glycerin	30.0	(ʒi)
	Aquæ	150.0	(℥v)

M. Sig.: One to four teaspoonfuls a day; and

℞	Strych. sulph	0.0005	(gr. $^1/_{120}$)
	Sodii arsenat	0.001	(gr. $^1/_{60}$)
	Codeinæ	0.01	(gr. ⅙)
	Quininæ valerianat	0.05	(gr. ⅚)

Ext. valerianæ. q. s. ad pil. No. I.

Sig.: One to six such pills at meals according to age.

To replace sugar for sweetening, use

℞	Saccharin	3.0	(gr. xlv)
	Sod. bicarb	2.0	(gr. xxx)
	Mannite	50.0	(℥i ʒv)

M. Et divid. in 100 tablets or lozenges.—Comby in "Le Progrès Médical," Jan., 1902.

Dropsy in Heart Disease.—Rest, light diet and purgation will be effective in some cases. Later it becomes more obstinate and cardiac stimulants, and diuretics must be given. Diaphoretics, the hot-air and vapor baths are not to be thought of. Digitalis is a most efficient diuretic, and when the renal secretion is not free under its use its action may be excited by the addition of strychnine, sparteine or caffeine. Nitroglycerin may also be prescribed, especially in cases with arteriosclerosis. An unirritating, yet highly effective diuretic is:

℞	Potassii acetatis	4.0	(ʒi)
	Infus. digitalis ad	60.0	(℥ij)

M. Sig.: Tablespoonful every three hours.

Salines and elaterium, podophyllin and belladonna may be used in the order named to deplete the venous system. Compound jalap powder may also be prescribed. With a large liver and ascites, or a history of syphilis, mercury is applicable, a good combination being

℞	Pulv. digitalis		
	Pulv. scillæ aa	1.0	(gr. xv)
	Hydrarg. massæ	2.0	(ʒss)
	Ext. bellad	0.0375	(gr. ⅝)

M. ft. pil. No. xv.

Sig.: One every three or four hours.

When efforts at relieving the dropsy fail, the most dependent or most swollen parts of the body should be scarified under strict antiseptic precautions. Fine silver trocars with rubber tubes attached may be inserted and the liquid allowed to drain off gradually.—J. M. Anders in "Practice of Medicine."

Kassowitz's Formula for Rickets.—

Phosphori puri	0.01	(gr. ⅙)
Solve in ol. amygdal. dulcis	10.0	(ʒiiss)
et adde		
Pulv. acaciæ	5.0	(ʒi ¼)
Syrupi	5.0	(ʒi ¼)
Aq. destillat	80.0	(℥ij ʒv)

Ft. emulsionem. Dose: One to two teaspoonfuls a day.—Fischer in "Infant-feeding in Health and Disease."

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SMITH ELY JELLIFFE, A.M., M.D., Ph.D., Editor,
No. 111 FIFTH AVENUE, NEW YORK.

Subscription Price, including postage in U. S. and Canada

PER ANNUM IN ADVANCE $4.00
SINGLE COPIES 10
WITH THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, PER ANNUM . . . 8.00

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

LEA BROTHERS & CO.,
No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK.

SATURDAY, MAY 10, 1902.

HUMAN AND BOVINE TUBERCULOSIS AND IMMUNITY.

FOUR years ago this month a foreign correspondent of the MEDICAL NEWS visited the beautifully situated laboratories of Professor Behring in Marburg and in describing them called attention to the fact that Professor Behring was then devoting himself almost exclusively to the study of tuberculosis. That study had already been carried on for several years. It is only now after over six years at the work of investigation that the result of Professor Behring's observations are given to the world. It is announced that the advance sheets of his book on tuberculosis have just made their appearance in Berlin. He is to be commended certainly for the patience with which his investigations have been followed up before publication. Six years is not very long for the investigation of so great a subject, but in the modern haste to get into print it is very commendable to find that Horace's maxim, *nonum prematur in annum* (keep your subject under consideration for nine years), should be almost literally followed with regard to a great scientific subject.

Two things are of special interest in the new book, according to the cable reports. Professor Behring announced during his recent visit to Stockholm, when he received the Nobel prize for the greatest advance in medicine during the last ten years, that he felt he could with confidence assert that bovine and human tuberculosis were essentially the same disease and were due to the same specific cause. Part of the present publication is devoted to the elucidation of the grounds for this opinion. Professor Behring has investigated the subject, especially from the chemical and physiological standpoint of the living and dead micro-organisms. His studies of toxins and antitoxins in a number of other diseases have particularly fitted him for success in the elaboration of this as yet little illustrated aspect of the tuberculosis problem.

The other question of special interest treated in his book involves the question of protective inoculation for tuberculosis. Marburg is beautifully situated in the midst of a smiling agricultural country in which there are many dairy herds. Professor Behring has found by actual experience in these farms that cattle can be inoculated with tuberculosis when very young and can be rendered absolutely immune to the disease later in life. The possibilities of medical progress involved in such a discovery are no doubt very great. Direct inoculation of human beings, of course, is entirely out of the question; but the development of this subject will undoubtedly bring important advances in the therapeutics of even human tuberculosis. The details of Professor Behring's work will be looked for with the greatest interest and we hope shortly to be able to give them to our readers.

BLOOD-PRESSURE DURING PREGNANCY.

THE so-called cardiac hypertrophy of pregnancy, with its associated increase of arterial tension, was the subject of one of the papers presented at the recent meeting of the Association of American Physicians. It was shown that the assumptions of the French school, with which American teaching has hitherto been in perfect accord, are erroneous. In seeking the origin of the old belief concerning cardiac hypertrophy it was found that this rested largely upon a mistaken interpretation of the fact that the apex of the heart is displaced during pregnancy. An inquiry into the question of blood-pressure showed that no constant rise occurred during the gestation period.

Now that methods of ascertaining arterial tension in the human subject are clinically available, it is important that normal variations in blood-pressure be thoroughly understood, for not until this knowledge is established, can clinical findings serve as therapeutic guides. From this standpoint the paper referred to is of definite value; for, if a departure from ordinary blood-pressure during pregnancy be no longer regarded as a physiological phenomenon, its occurrence in a given case demands that its cause be sought and if possible removed.

There is no doubt that an increase of arterial tension does occur in some cases during pregnancy. In these instances, abandoning the theory of cardiac hypertrophy, as well as that of a mere increase in the quantity of circulating fluid, it is the duty of the physician to look promptly to the eliminative functions of his patient. Changes in the mental and nervous condition may be responsible for the enhanced tension, or the latter may be due to disturbed metabolism resulting from lack of exercise; but a far more probable cause and one immeasurably more important is a disturbance of renal function. In the course of recent inquiry into this very subject of the cardiac hypertrophy of pregnancy in one of the lying-in hospitals of this city, the accidental discovery of unusually high tension in one case led to the diagnosis of a previously unsuspected serious renal complication.

When high arterial tension exists and is thought to be due to an accumulation of waste products, or, in other words, to defective kidneys, the symptomatic use of nitrites must be understood to deal with the condition of high tension itself rather than its cause, except in so far as the nitrites are diuretic and diaphoretic. Rational treatment in these cases must be both eliminative and prophylactic. The indications are to reduce the quantity of animal food, to cut off the supply of alcoholic beverages, to use water freely and to purge liberally, preferably with mercury.

INFANT-FEEDING AND THE SECOND SUMMER.

THE popular belief that represents the second summer as so lamentably fruitful in infant mortality is too well grounded in sad experience for its warning to be neglected. Notwithstanding the advances made in scientific infant-feeding during recent years, and the consequent reduction of the infantile death-rate in our large cities in the hot weather, the second summer still maintains its unenviable reputation.

The change in diet that is necessitated about the beginning of the second year of child-life almost inevitably brings digestive disturbances in its train and these provide the foundations for pathological changes which the exhaustion of summer heat and its accompanying infectious material find a ready support for mortal ailments. To delay the employment of mixed diet, on the other hand, by an exclusive milk feeding until the dreaded second summer is past, is to run quite as serious a risk of lowering the child's resistive vitality by insufficient nutriment and, while avoiding the Charybdis of gastro-enteric affections, to run into the Scylla of constitutional malnutrition.

It is evident that the dangers of the second summer must be avoided by prophylaxis of the gastro-enteric disturbances that are the root of its evils rather than by a dangerous simplification of diet. To be effective the prophylactic measures must begin, not when the child is already ailing, and not during the heated term itself, but when the first warm weather begins to be felt in the early part of May. The development of the molars—the true grinding teeth—during the second year shows Nature's evident intention of providing the means for the proper preparation of mixed diet. There seems to be little question that after milk the first article added to the diet list should be some form of cereal. If for three or four months at the end of the first year of life some form of cereal gruel has been added to the milk the transition to a mixed diet is much easier than it would otherwise be. As to what the cereal shall be seems to be a matter of indifference for healthy children, although barley in some form seems to agree with more children than almost any other cereal. When, by inheritance and habit, children are of constipated tendency, oatmeal seems a better grain to begin with. When there are any signs of loose bowels, it must, however, be stopped at once and one of the blander cereals must be substituted—barley or wheat or even corn in the form of hominy, although there are many children with an idiosyncrasy against corn in any form.

The most serious objections to the use of the cereals in infant-feeding at the end of the first and at the beginning of the second year is undoubtedly the present-day tendency not to cook grain in any form sufficiently before it is eaten. Our grandmothers knew that oatmeal, or cornmeal, or hominy, had to be cooked for hours in order to be thoroughly digestible. The modern cook finds such slow cooking entirely too bothersome. As Dr. Holt said at the April meeting of the Pediatric Section of the New York Academy of Medicine (see MEDICAL NEWS, p. 808) no cook in New York gets up in time to cook a cereal properly for a child's breakfast and so this part of the meal must always be prepared over night. We are deluged with prepared cereal foods of various kinds at the present time. All of them are of about equal value, but nearly all of them make the mistake of advertising that they need much less time for their preparation for the table than is really the case. It would seem a good rule to multiply the time given in the directions by three whenever a cereal is to be prepared for children's use.

After cereals, other starch products such as bread and potatoes are useful, but require special directions if they are not to prove irritating. Children are often encouraged in the practice of eating the soft center of bread and leaving the crust. Needless to say this is just the opposite of the practice that should be encouraged. Bread should be given mainly as crusts, or so stale or toasted that considerable chewing is necessary. The saliva means too much for the digestion of wheat starch for this rule to be neglected with impunity. With regard to potatoes it is doubtful if any form of preparation that uses only the heat of boiling water ever makes them readily digestible. Baking is done at a temperature nearly 200° above the boiling-point and this produces a bursting and alteration of the potato starch granules that make them comparatively easy of digestion even by the child's digestive juices. When only boiling-water is employed most of the starch remains enclosed in an impermeable envelope of cellulose material. The green vegetables, such as spinach, are of use particularly for anemic children, but must be very carefully prepared and thoroughly screened.

As a matter of fact the source of many digestive disturbances to which later serious summer complaints are added is to be found in allowed indiscretions of diet. Concentrated sweets, uncooked fruit, apples, plums, bananas and the like, are always dangerous, no matter how apparently healthy the child may be. Table food of various kinds not especially prepared for children is another source of danger. If the original digestive disturbance can be avoided the serious, even fatal, gastro-enteritis will not develop. At the first sign of gastric trouble the diet must be limited. The sick child must not be tempted to eat; above all dainties must not be provided to stimulate the protectively lowered appetite and the whimpering of the child for some forbidden article of diet that, because of the caprices of a diseased appetite, it craves, must not be indiscreetly satisfied. If good habits in these matters be formed in May and June, July and August will lack many of their wonted dangers during the dreaded second summer.

ECHOES AND NEWS.

NEW YORK.

Willard Parker Hospital Service.—A competitive examination for the selection of candidates for the position of interne to the Willard Parker and Riverside Hospitals will be held at the Willard Parker Hospital on Saturday, May 31, 1902, at 2.30 p.m. Each candidate is to serve one year from July 1, 1902, to July 1, 1903. The service consists of about four months as interne at the Willard Parker, four months as interne at the Riverside and four months as ambulance surgeon. Candidates must be graduates in medicine. Internes live at the hospitals during the time of service. No salary is attached to the position. The hospitals are devoted to the treatment of contagious diseases and their complications. Applications in writing should be sent to Dr. Henry W. Berg, 923 Madison Avenue, New York City, Secretary of the Medical Board. Consulting hours 3 to 4 p.m.

Dr. Jacobi Resigns.—Dr. Abraham Jacobi, after thirty-two years' active service in the College of Physicians and Surgeons as professor of diseases of children, has tendered his resignation to that institution and will retire at the end of the present term. Dr. Jacobi enjoys an exceptionally high standing in his profession, and the announcement that he would leave their ranks was received with many expressions of regret by his colleagues. He became lecturer on infantile pathology in the College of Physicians and Surgeons in 1857, and in 1860 the first chair upon diseases of children established in America was instituted in the New York Medical College, with Dr. Jacobi as professor. In 1865 he was professor of diseases of children in the University of New York, but resigned to become clinical professor of diseases of children in the College of Physicians and Surgeons. In 1895 he received an offer of the clinical professorship in one of the largest schools in Germany, but he refused to leave the land of his adoption.

New York Academy of Medicine.—A stated meeting will be held Thursday evening, May 15th. The following program has been arranged: "Stomach Vertigo," by Charles Sumner Fischer, M.D.; "Tympanic Vertigo," by William P. Brandegee, M.D.; "Neurological Diagnosis of Vertigo," by Pearce Bailey, M.D.

PHILADELPHIA.

Contagious Diseases.—For the week ending May 4th the morbidity of the various contagious diseases was very satisfactory, with the single exception of scarlet fever. That disease is giving cause for alarm in some sections of the city, the week showing 103 new cases and 7 deaths. Typhoid fever showed a very decided decrease, as did also smallpox, there being but 15 new cases and 1 death from the latter disease.

Liberal Donation to Consumptives Hospital.—After visiting the White Haven Sanatorium of the Free Hospital for Poor Consumptives and seeing for himself the admirable work which is being done there in behalf of sufferers from tuberculosis, Henry Phipps has presented $2,500 to the Free Hospital. The gift will be used to provide ten additional beds at the Sanatorium for one year. Forty male patients are now being cared for there and there are forty-five on the waiting list. Ground is to be broken this week for the construction of three new cottages which are to be used exclusively for women.

Jury Condones the Use of Boric Acid in Butter.—J. M. Jones, a creameryman of West Grove, who was prosecuted by the State Dairy and Food Commissioner on the charge of using boric acid in the adulteration of butter, was acquitted of the charge May 1st. The defendant acknowledged the use of the acid in the proportion of six ounces to seventy-five pounds of butter and in his contention that this amount was harmless to the consumer he was borne out by several physicians. Boric acid is used as a preservative by all the butter dealers of the county, hence this case was looked upon as a test case.

Children's Seashore House.—This institution at Atlantic City will open early in June, although the new buildings are not yet fully completed. It has three departments—one for girls between fourteen and twenty years of age, one for girls from three to fourteen years, and boys from three to twelve years, and a third for sick infants under three and one-half years, accompanied by their mothers. In the new buildings between Annapolis and Richmond Avenues there are accommodations for 325 children and 32 mothers. During the summer of 1901 the institution was open 101 days and cared for 1,901 children. The physician in charge is Dr. W. H. Bennett of this city.

Corner-stone of New Samaritan Hospital Laid.—The corner-stone of the new building for the Samaritan Hospital was laid May 3rd. This hospital was started in 1893 in one dwelling-house. The new buildings will give the institution accommodations for 100 patients. The president, Rev. Russell H. Conwell, in his address emphasized the fact that the institution had been made possible by poor men: "We have not received contributions from the rich," he said, "but from poor laboring men and women who love humanity." A row of bricks each bearing the name of a person who contributed one dollar will extend around the building.

Dr. Bryson Operates in Philadelphia.—Dr. John J. Bryson of St. Louis operated in Dr. Horwitz's clinic at the Jefferson Hospital, May 2nd. The operation was a perineal prostatectomy and Dr. Bryson's work was most highly praised by the large number of surgeons who witnessed it. The prostate was enucleated in three pieces within twelve minutes from the time the incision was begun, the entire operation occupying but seventeen minutes.

Homeopaths Denounce the University.—The homeopathic physicians of this city are resenting more or less pronouncedly the action of Dean Marshall of the University of Pennsylvania regarding the inquiry of a homeopathic physician regarding the post-graduate spring course at that institution. The letter of inquiry contained the sentence, "I am a graduate of Hahnemann College of Philadelphia, 1900, and am anxious to do post-graduate work in clinical medicine and pathology." The following reply is stated to have been received from the Dean: "Dear Doctor: In reply to your letter of April 16th, I would say that the post-graduate course which is to begin early in May is designed for graduates of regular schools of medicine." It is claimed by homeopaths that the other schools of medicine in this city admit homeopathic graduates or students if they are able to pass the required examination given to all applicants. The *Hahnemannian* says in part: "It is mortifying to us, as citizens of Philadelphia, to think that the University of Pennsylvania has the ignominy of standing alone as the only college in the country refusing to take homeopathic graduates as students. It was only a few years ago that the Association of American Medical Colleges ruled that it was proper to accept for advanced standing students from any college, if found qualified on examination."

Pin Vomited after Sixteen Years.—At the Academy of Surgery, May 5th, Dr. W. Barton Hopkins exhibited a corroded brass pin of the ordinary size, which had been vomited by a woman sixteen years after it had been swallowed. Vomiting had been the main symptom.

A Case of Spina Bifida.—A case of spina bifida was operated upon by Dr. DeForest Willard. The type was that of meningo-myelocele. The opening left by removal was closed by an osteoplastic flap brought from the posterior superior spine of the ilium of each side. Healing has been prompt and the child is doing well, with the exception of having a moderate degree of hydrocephalus. A point made was that during the operation the child was kept on its face instead of on its side, thus allowing very little fluid to escape.

The Effect of Pistol Shots at Close Range.—Dr. John H. Brinton gave an exceedingly interesting description and demonstration of this subject, the experiments being a continuation of those begun by the late Dr. Fish. It was demonstrated that with the use of black powder the relative position of the pistol can be determined. Surrounding the bullet-hole is a blackened area due to the powder and in addition to this is on one side a projecting brownish area called the brand. This is caused by the smoke, gases, and powder and is due to the recoil of the pistol, as in cases in which the pistol is fired when held firm by a vice this brand is absent. The point in regard to the brand is that it is to that side of the bullet hole through which a line from the hammer to the sight of the pistol passes. Consequently it can be told whether the hammer side was held up, down, or to either side. With the new smokeless powder this does not hold good.

Obituary.—Dr. John S. Miller, formerly connected with several hospitals of this city, died last week in Denver, Col., where he had gone two years ago on account of failing health. Dr. Miller was one of the physicians of this city who went to the relief of the sufferers from the typhoid epidemic at Plymouth, Pa., and later to the scene of the Johnstown flood.

Dr. Cyrus D. Hottenstein, for more than twenty years physician to the Working Home for the Blind and long connected with the medical service of the Pennsylvania Railroad, died at his home, April 29th. Before coming here Dr. Hottenstein practised in Wisconsin for some years and served during the Civil War.

Dr. Henry C. Yeagly, President of the State Eclectic Medical Examining Board, died at Lancaster, May 2d of pneumonia.

CHICAGO.

More Study for Medical Students.—At a recent meeting of members of the State Board of Health plans were discussed to lengthen the term eight months over the present required minimum of four years. The Committee on Administration of the Medical Practice Act discussed this and other matters within their jurisdiction. The Board meets quarterly to consider questions relative to the requirements in medical courses. It is said, that three years ago they fixed a minimum course for all colleges at four years of six months each. They now propose to lengthen each year's course two months. If this plan be approved by the whole Board, it will affect the senior students of all colleges in 1903, and the students who expect to graduate in 1906 will have studied eight months more than graduates of this year.

Aid to Hospitals.—A musical and dramatic entertainment was given by Mrs. Potter Palmer, at her residence, April 23d, in aid of the Maurice Porter and St. Luke's Hospitals, which netted between $600 and $700 each for these institutions.

Structure of the Lung and Its Blood and Lymph Supply.—This was the title of an address delivered by Professor W. D. Miller of the University of Wisconsin before the students of the Northwestern University Medical School May 2d. Professor Miller has made special research in lung anatomy and circulation. His lecture, therefore, was listened to with great interest.

Officer of the Day at Cook County Hospital.—The officers of the day at Cook County Hospital are evidently rapidly exhausting their supply of recommendations. The following recommendations have been made: First, that an additional ward be established for scarlet fever and diphtheria cases. This is all right. Second, that each house physician and surgeon be clad in a spotless white duck uniform. Third, that a dressing-room be established in connection with the examining-room. Fourth, that the wards be brightened by pictures. Fifth, that the system of ward cooks, recently inaugurated, be continued.

Departure of Dr. Senn.—Dr. Nicholas Senn has left this city en route for Russia, as a delegate to the International Red Cross Association which meets in Moscow this month.

Verdict in Favor of Dr. Moras.—Dr. Edmund R. Moras was given a verdict against the West Chicago Street Railway Company of $45,000, for injuries sustained by him six years ago, which resulted in the amputation of his left arm at the elbow.

Appointment of Dr. Stearns.—Dr. Wm. G. Stearns, formerly medical superintendent of the Illinois Eastern Hospital for the Insane at Kankakee, and recently connected with the Neurological Department of Northwestern University Medical School and of the College of Physicians and Surgeons, has been appointed superintendent of the Sanitarium at Lake Geneva, Wis.

Meeting of Nurses.—The Nurses' Associated Alumni of the United States held their fifth annual convention at the Lexington Hotel, April 30th, May 1st and 2d. Dr. John B. Murphy gave a surgical clinic at the Mercy Hospital and Dr. Arthur R. Edwards a medical clinic.

Necessity for a Children's Hospital.—Poor children suffering from contagious diseases are constantly turned away from the County Hospital because there is no room for them. City and County officials favor the establishment of a sanitarium devoted exclusively to the treatment of such cases. In March and April more than two thousand persons were reported to the Health Department as stricken with various ailments. According to officials of the County Hospital, lack of adequate facilities at the County institution for the care of contagious diseases is daily becoming more apparent. In Ward 28 there were housed on one day seventy-one patients, while the normal capacity is only forty-five. Patients were compelled to sleep in the halls and upon the floor. It is said that if more patients are placed in the wards, the authorities will have to use the hammock or upper and lower berth plan.

Hemorrhoids; Their Pathology, Indications for and Technic of Operative Treatment.—Dr. J. Rawson Pennington read a paper on this subject. The author defines and describes hemorrhoids, then divides them into three principal varieties, internal, external, and interno-external. He said the two former varieties may be subdivided still further. The principal factors entering into the etiology and pathology of hemorrhoids were classed under constitutional, mechanical and local. After speaking at length of the pathology of hemorrhoids, the author takes up the indications for operative treatment and among them he suggests the following: (1) Frequent recurring hemorrhages, even though small in amount. Continual loss of blood, must, sooner or later, be followed by profound anemia, accompanied with pallid features, dizziness, and palpitation of the heart. (2) Frequent protrusion of the tumors, causing pain and distress to the individual. (3) Repeated attacks of inflammation. (4) Those cases in which the piles remain outside the anus after defecation and require manual replacement. (5) Those which protrude on slight exertion and have to be replaced. In regard to the operative treatment, the patient is prepared in the usual way for such an operation, and placed upon the operating-table in the lithotomy position. The sphincter is then slightly, gently and carefully dilated with the fingers, and the rectum irrigated with an antiseptic solution, usually bichloride of mercury, 1-3,000, followed by normal salt solution. Each anal quadrant is now grasped at the muco-cutaneous junction with a pair of T-forceps. These are held by an assistant. By means of these instruments the anus is everted and the internal tumors exposed. Seizing with the full hand the forceps attached to the posterior quadrant, fully evert it, and make pressure against the base of the hemorrhoid with the knuckle of the index finger, which places the mucous membrane covering it on a tension. Now, with a pair of scissors, sharply curved on the flat, remove an ellipse from the apex of the over-stretched covering of the hemorrhoid, commensurate with the size of the tumor. This opens the blood lakes and permits most of the blood in the tumor to escape. All of the angiomatous tissue is now carefully removed, when the remaining wall collapses. This leaves a very small area of denuded surface. Each quadrant in regular order is treated in like manner. A stream of hot sterilized salt solution of 115 to 125° F. flows over the field continuously during the operation. Spurting vessels, if there be any, are caught with a pair of forceps and thoroughly twisted. Should this fail to control the hemorrhage, throw a ligature around the vessel and ligate it. So far he has ligated bleeding points in three patients only, although he has done more than two hundred operations. The T-forceps are then removed, and all external tumors and tabs of skin cut off, care being taken not to make an incision in the muco-cutaneous junction, when it can be avoided, as this is the most sensitive point around the anus. This same precaution should also be observed when removing the internal tumors. The field is then dusted with some antiseptic powder, and a rubber-covered tampon introduced through a bivalve speculum. The tampon is allowed to protrude about 1.5 inches beyond the anal orifice. Gauze is carefully wrapped around the protruding portion and packed close to the anus. The anchoring string of the tampon is wrapped around a piece of gauze held close to one side of the tube, and woven in with the other dressings, so as to prevent the tampon from slipping into or out of the rectum. Over this is placed gauze, cotton, and a T-bandage, which is made quite taut. The patient is then placed in bed, and usually given a hypodermic of morphine, if not contraindicated. By operating in this manner there are no tender and obstructive stumps to slough, nor nerves caught and squeezed, producing excruciating pain, as there are when the ligature method is used; neither are the nerves and tissues painfully burned, as when the clamp and cautery are employed. In lieu of this there is a free and unobstructed outlet through the anus and a fibrinous exudate is deposited over the operative field, which exudate is neither destroyed nor disturbed by the removal of the dressings. Moreover, the danger of stricture is obviated, as the normal caliber of the bowel is left practically covered with mucosa and submucosa. The anal orifice is not contracted, as it necessarily is after either of the operations just mentioned. At the end of forty-eight hours the patient is given a cathartic and the tampon is removed. Its removal is attended with ease and no pain. The movement of the bowels is usually painless, and there is, as a rule, little or no bleeding. From this time on, until convalescence is well established, the parts should be washed or irrigated twice a day with an antiseptic solution and dusted with some antiseptic powder. After the bowels have moved the patient is instructed to keep them soft for two or three weeks. Should the patient complain of pain or an aching sensation, a hot Sitz bath of twenty minutes' duration is given. As a detergent, small pieces of wet cotton or cottonoid are used. Paper and other hard or rough substances are interdicted. The rubber dressing is important, if not imperative, in this operation. There is but little or no pain during the first and subsequent movements of the bowels. This method of procedure, which the author has now employed in more than two hundred cases, in many of which local anesthesia was used, has been by far more satisfactory than any method previously used. It is very quickly and easily performed. Patients suffer little or no pain, as a rule, and they are out of bed in a week, and often in less time. In fact, it is not uncommon for them to resume their work on the fifth or sixth day after operation.

Fibroids of the Uterus and Broad Ligaments.—Dr. Edwin Ricketts of Cincinnati, Ohio, read a paper, by invitation, on this subject. Within the folds of one or both broad ligaments fibroids are occasionally found, but not so frequently as within the uterine tissue. It is claimed by some that fibroids always begin in the uterine zone, and if afterward found within the broad ligaments, it is by forcible extrusion into the same, due to the contractile force of the longitudinal and circular uterine muscle fibers. Uterine fibroids were divided into the submucous, intramuscular, subserous or subperitoneal. Uterine hemorrhage, in many instances, comes on as a result of the presence of fibromyomata situated under the mucous layer, or reaching that region as the result of pressure. The mucous membrane is less resistant than the muscular tissue to the mechanical action of the tumor. As a result, the tumor is expelled into the cavity of the uterus rather than into the abdominal cavity. In the subserous variety the muscular element of the uterus prevents advance of the tumor toward the mucous layer, and tends to cause a pedunculated protrusion into the abdominal cavity. Fibromyomata of the broad ligaments may be explained in several ways: (1) Expulsion from the uterine wall, with formation of the subserous variety from muscular contraction. (2) By tubal influence involving the retrograde expulsion and gravity. (3) Arterial origin. The arteries supplying the uterus and ovary traverse the broad ligaments and become tortuous and straight in turn, as the uterus becomes pregnant or later as it undergoes involution. The author said that there are numerous clinical facts which suggest to his mind that arteriosclerosis is a much more important etiological factor in uterine fibroids than is generally conceded. The great frequency of fibroids in the negro race, associated with the great prevalence of syphilis in the negro is especially suggestive, if the intimate relation of the latter disease to arteriosclerosis in general were considered. He had met with uterine fibroids in syphilitic subjects in a sufficient number of instances to impel him to more careful observations along this line in future. Specimens of uterine fibroids exhibited by numerous authorities have shown in many instances marked changes in the walls of the blood vessels. He called attention to four operative cases which covered the field of single fibroids. One weighed 65 pounds and was situated within the folds of the left broad ligament, the uterus being normal in size. The histology of this tumor showed it to be largely myomatous, indicating that it had been mechanically extruded early from the uterus to within the folds of the broad ligament. The same can be said of the other three cases, of 20, 16, and 8 pounds. The tissue in the case weighing 20 pounds was more distinctly fibrous in character. In one case of multiple fibroids (six small ones) recently removed by abdominal hysterectomy, menstruation had not been interrupted, but had been regular and without pain. Five of the growths were subserous. The sixth was submucous in character, the patient being forty-one years of age. Fortunately she had not been curetted. One case of fibroid of the fundus of seventeen years' duration, underwent cystic degeneration; the solid portion weighed 60 pounds, the fluid 38 pounds, in all 98.

Deep Transverse Arrest as an Indication for Forceps.—Dr. Charles B. Reed read a paper with this title. The "impacted" head is found low down in pelvis with sagittal suture parallel to transverse diameter of pelvis, fontanelles on about the same level and no tendency to forward rotation of occiput. Deep transverse arrest of the head was recognized 32 times in the last 3,600 labors at Chicago Lying-in Hospital, .9 per cent. According to Munch, the condition occurs in primiparæ in 81.61 per cent. of all cases and he believes it to be due to the early descent of head into pelvis. This unusual frequency in primiparæ is not borne out in the Chicago Lying-in Hospital statistics. Here 18 cases occurred in multiparæ and 14 in primiparæ. Flat pelves, the *too large* pelvis (47 per cent. of Ahlfeld's cases), exostoses of sacrum and symphysis, insufficiency of the powers of labor, pendulous abdomen and dolichocephalous are also of etiological importance. The diagnosis is readily made by vaginal examination. The danger to mother and child arises from the great prolongation of the labor and the consequent evils—sepsis, fistulæ, necrosis, hemorrhage, etc. Cases are treated either by position on side, by manual correction or by forceps. In the Chicago Lying-in Hospital service, the maternal condition furnished the most frequent indication to terminate the labor. Forceps were applied 23 times; head spontaneously rotated 9 times. Forceps applied in that oblique diameter of pelvis which corresponds to the position of occiput. Head is grasped by anterior malar bone and posteroparietal eminence. Two objects are to be secured, rotation and extraction, and these must be simultaneous. *Conclusions:* Deep transverse arrest of the head is a relatively common complication of labor. Diagnosis is easily made from position of fontanelles and sutures. Normal termination of case can not be awaited in most instances, but forceps should be applied as soon as it is evident that rotation will not occur spontaneously. Location of occiput must be determined before forceps are applied. Blades must be applied in that oblique diameter toward which the occiput lies. Traction and rotation must be simultaneous.

CANADA.

A Medical Editor Resigns.—It is understood that Dr. H. B. Anderson, Editor-in-Chief of the *Canada Lancet*, has tendered his resignation.

Personals.—Dr. Harry W. Spence, last year house surgeon at the Toronto General Hospital, has received an appointment from the British Government as medical officer for one of the concentration camps in Natal.—Dr. R. A. Reeve, Dean of the Medical Faculty of Toronto University, is to receive the honorary degree of Doctor of Laws at the June Convocation.—Dr. Adam H. Wright, Editor-in-Chief of the *Canadian Practitioner and Review* is spending a holiday at Atlantic City.—Dr. Dryer has been appointed on the staff of the Vancouver, B. C., City Hospital.—Dr. Rose, who has been house physician at the St. Boniface Hospital at Winnipeg for the past twelve months, has resigned to commence practice at Gladstone, Manitoba.—Dr. James F. W. Ross has returned to Toronto from a two months' holiday in the Bahamas.—Dr. James Stewart, Professor of Medicine and of Clinical Medicine at McGill University, Montreal, has been elected President of the Association of American Physicians.—The authorities of the Toronto General Hospital have decided to place a woman doctor on the regular visiting staff, and also to appoint two women doctors as registrars.

Winnipeg General Hospital.—For the week ending April 26, the Winnipeg General Hospital treated 218 patients. Of this number 133 were men, 58 women and 27 children.

Order for Compulsory Vaccination.—The Board of Health of the Province of Quebec has once more called upon the city of Montreal to immediately enact a by-law providing for obligatory vaccination, failing to do which they will compel a heavy fine. One of the aldermen of the city has one in readiness which will be brought before the Council at its next meeting.

Western University at London.—The results of the term examinations in medicine at the medical department of the Western University were posted May Day. Fifteen young men will thus be let loose to swell the ranks of the medical profession in this province of Ontario.

Dalhousie University, Halifax.—The annual commencement exercises of the University at Halifax, Nova Scotia, were held on the afternoon of April 29th, when twenty-one received the degree of M.D., C.M., the largest graduating class in the history of this University. The final gold medalist was Mr. S. A. Fulton of Truro; the primary, Mr. A. R. Cunningham of Dartmouth.

Two New Consumption Sanatoria.—As a result of the recent conference on tuberculosis, held at Ottawa, it is announced that two wealthy Canadians will build at their individual expense, two new sanatoria for the treatment of consumptives. Sir William Macdonald will donate one to be erected near Montreal; while the newly-elected President of the Canadian Association for the Prevention of Tuberculosis, Mr. W. C. Edwards, M.P., will present another which will be located near Ottawa.

Shutting Out Diseased Immigrants.—Legislation is at the present time before the Canadian House of Commons which will amend the Immigration Act. As originally drafted this amendment simply gave the Governor-General power to prohibit by proclamation or order the landing of persons in Canada, suffering from dangerous or infectious diseases. Now, in addition, a further clause will be added to the effect that "Such prohibition may be absolute or may be accompanied by permission to land for medical treatment only, for a period that may be determined by the order or proclamation."

Samaritan Free Hospital, Montreal.—According to the report presented at the annual meeting of the managers of The Samaritan Free Hospital for Women at Montreal, held last week, there were treated in the institution during the past hospital year 133 patients, an increase of 20 over the previous year. In the outdoor department over two hundred received advice and remedies. The deaths number 5 for the year, a decrease in comparison with the previous year. The receipts reached $3,733.74, while the expenditure amounted to $3,149.75.

GENERAL.

International Association of Railway Surgeons.—The fifteenth annual meeting of this Association was held in St. Louis, Mo., April 30th, May 1st and 2d, under the presidency of Dr. Rhett Goode, of Mobile, Alabama. Several papers were read and discussed. The following officers were elected for the ensuing year: President, A. W. McCandless, St. Louis, Mo.; Vice-Presidents, A. L. Wright, Carroll, Iowa; J. B. Rule, St. Louis, Mo.; J. C. Wysor, Norfolk, Va.; E. E. Kitchener, Canada; W. G. Jamieson, Texas; R. Ortego, Mexico, and P. Dougherty, Kansas. D. S. Fairchild, Clinton, Iowa; A. I. Bouffleur, Chicago, and J. R. Hollowbush, Rock Island, Ill., were elcted members of the Executive Board. Indianapolis, Indiana, was selected as the place for holding the next annual meeting.

San Francisco Board of Health—*Whereas,* The Mayor of the city of San Francisco has seen fit to remove the so-called old Board of Health, and *Whereas,* The Chief Executive of the city has stated that he has determined after a prolonged personal investigation that bubonic plague has never existed in San Francisco, and *Whereas,* The position is absolutely unsupported by any competent, unprejudiced physician who has made personal examination of suspects or alleged cases of plague before or after death, or who has examined the bacteriological evidence presented, and is further in direct conflict with the findings of the Federal Government Experts and Special Commission, therefore be it, *Resolved,* That the Medical Society of the State of California emphatically condemns this action on the part of the Mayor of San Francisco and at the same time endorses the position always maintained by the old Board of Health in its sanitary defense of the people of the city of San Francisco and of the country at large.

Medical Society of the State of California.—This Society met in annual session April 15, 16, and 17, and elected the following officers for the ensuing year: President, F. B. Carpenter, San Francisco; First Vice-President, C. C. Wadsworth, San Francisco; Secretary, George H. Evans, San Francisco; Treasurer, E. E. Kelly, San Francisco; Board of Examiners, Dudley Tait, David Powell, D. E. Osborne, W. S. Thorne, R. L. Wilbur.

McKinley's Physicians.—Congress will pay the funeral expenses of President McKinley, including the physicians' bills, over which there has been so much contention. An item is to be inserted in the Urgent Deficiency Bill, now under consideration by the House Committee on Appropriations, which provides for an appropriation of $50,000 to defray the expenses attending the death and burial of the President. It is understood that an agreement has been reached whereby $31,000 of the amount appropriated shall go to the physicians and the remainder will be used to defray the funeral expenses. Friends of the dead President and others interested have been consulted, and it is believed that the allowance will be entirely satisfactory to all concerned. Statements of all the expenses incurred were submitted to the Committee, and the amount named will cover all obligations of the Government.

American Orthopedic Association.—The next annual meeting of this association will take place in Philadelphia, June 5, 6, 7, 1902. An unusually full and attractive program is announced.

Prize Essay on the Dangers from Self-drugging with Proprietary Medicines.—The Colorado State Medical Society offers a prize of twenty-five dollars for the best essay, for circulation among the laity, upon the dangers of self-drugging with proprietary medicines. The competition is open to all. Essays must be typewritten in the English language, must contain not more than 3,000 words, and must be submitted before June 15, 1902. Each essay must be designated by a motto and accompanied by a sealed envelope, bearing the same motto and enclosing the name and address of the author. The essay receiving the prize will become the property of the Society for publication. Others will be returned to their authors. Essays should be sent to the Literature Committee. Dr. C. A. Graham, Sec'y, Stedman Block, Denver, Colorado.

St. Louis Medical Society of Missouri.—At the meeting held May 3d, Dr. R. B. H. Gradwohl read a paper entitled "The Bacteriologic Findings in a Fatal Case of Tetanus Complicating Vaccinia."

Tri-State Medical Society.—The fourteenth annual meeting of the Tri-State Medical Society will be held at Birmingham, Ala., October 8, 9 and 10, 1902. This meeting promises to be of unusual interest from present indications. One of the prominent features of the last meeting and which attracted considerable attention was the discussion of sociological questions. The papers in this section excited considerable comment locally and in many of the journals throughout the country.

Abolition of the Newspaper Publication of Personal Medical Advertisements.—A paper read by Dr. J. W. Kyger before the Kansas City Academy of Medicine on "The Decadence of the American Race" was deemed of sufficient importance to warrant the appointment of a committee to draft resolutions expressing the feeling of the regular medical profession in regard to the abatement of one of the causes of this condition, and also asking for the coöperation of the profession throughout the United States. *Whereas,* It can and has been shown, by ample statistics, that the American race is rapidly decreasing in its birth-rate, thereby threatening ultimate and complete decadence of the race, and *Whereas,* Such decadence has become so apparent that it should claim the serious attention of those of influence and power to in any degree lessen this evil, and *Whereas,* Without a special effort to investigate, it must have been observed by the most indifferent with what flagrant violation of all sense of delicacy the public press gives place to advertisements of nostrums and means intended to prevent or cut short pregnancy; these advertisements appearing in a column of the paper set apart for such purpose under the name of "Personal Medical Advertisements," and referred to as "Guarantees," "Sure Relief," "Sure Prevention," etc., occupying in some Sunday editions of reputable papers as much as two columns, destined to fall into the hands of all classes, and *Whereas,* We recognize the press as a most potent factor in the education of the masses; be it *Resolved,* By the Academy of Medicine of Kansas City, Mo., that we respectfully recommend that a censorship over the public press should be exercised to the end of correcting such practice of publishing advertisements as those referred to in the foregoing. Be it further *Resolved,* That it should be deemed of sufficient moment for the attention of the Post Office Department of the United States of America restricting or prohibiting the distribution of such papers, periodicals or magazines through the United States mail, to be called to the matter, if they continue to so prostitute their columns with such matter. And be it further *Resolved,* That a copy of these resolutions be sent to every State Medical Association in the United States, urging their coöperation in this movement by the adoption of these resolutions. *Resolved,* That we request the Secretary of every State Medical Association adopting these resolutions to forward two copies, one to the American Medical Association and the other to the Post-master General petitioning for relief from this destructive influence.

Obituary.—Dr. John Homans, second, one of the most eminent physicians in Boston, died May 4th at his residence on Newbury street, at the age of forty-five.

Dr. Joseph P. Turner, one of the oldest of the alumni of the University of Pennsylvania, died recently in Trenton, aged seventy-nine years. He has held several municipal offices in Trenton and was an active Democratic orator. He was in the cavalry service in the Civil War. He had been in practice for more than fifty years.

Dr. Charles H. Masten, one of the best-known physicians in Rockland County, died at his home in Nyack recently of pneumonia, after an illness of ten days. He was in his sixty-third year and unmarried. Dr. Masten was born in Odell town, Province of Quebec, Canada, August 21, 1839, and came to New York when about thirty years old. He studied medicine in Bellevue Medical College and after graduation settled in Rockland County.

CORRESPONDENCE.

THE LAY PRESS AND MEDICINE.

To the Editor of the MEDICAL NEWS:

DEAR SIR—As we have always desired to avoid extra-medical publicity, we would ask you to publish the following statement:

On April 19th there appeared in the *Medical Record* an account of some experimental work that we had done with regard to the transmission of light through the human body. This seems to have excited the curiosity of a daily paper of this city; but when its representatives came to see us we absolutely refused to be interviewed or quoted in any way. Knowing the methods of contemporaneous journalism, however, we were careful to point out to the reporter that the experiments had no public interest and that no claims of therapeutic results were made in the article. We refused to give the pictures for publication, or to allow the newspaper men to use the machine to make others; and we warned the manufacturers upon the subject.

It seems, however, that the newspaper in question had other relations with the manufacturers, and they succeeded in getting the use of a machine at the factory and repeated the experiments. The results were the postal cards sent to the profession last week and the article in the *World* of Sunday, May 4th.

We desire to disclaim all responsibility in the matter and more especially for the therapeutic statements and hints that it contains. On this latter subject we said in the *Record,* "The proof of the penetration of actinic light to and through the internal organs apparently opens a field for its successful employment as a therapeutic agent in their maladies in view of its admitted efficacy in a number of dermatoses." Upon this conservative and provisional basis the whole newspaper superstructure was raised.

It seems impossible to avoid undesirable publicity when the public journals think that a subject can be strikingly exploited.

WILLIAM S. GOTTHEIL, M.D.,
MILTON W. FRANKLIN, M.D.

New York, May 5, 1902.

TRANSACTIONS OF FOREIGN SOCIETIES.

French.

RED BLOOD-CELLS AND ELECTRICITY—THE COMBINED PRODUCTION OF INDOXYL AND UREA—FATTY ACIDS AND DRINKING-WATER—FATAL CHLOROFORM NARCOSIS—FIBROMA AND SPASM OF THE PYLORUS—HEMODIAGNOSIS OF HYDATID CYSTS—LACTATE OF MERCURY—CEREBRAL RHEUMATISM.

GALUGAREANU and HENRI, at the Academy of Sciences, February 24, 1902, read a paper on the resistance of red blood-cells determined by their conductibility of electricity. As a rule the resistance of the blood-cells is measured by studying the diffusion of the hemoglobin in a mixture of blood and a liquid, isotonic or hypertonic. The authorities raise the question in their own minds whether under these conditions the salts contained in the blood-cells diffuse with the same facility as their coloring matter. For this purpose they washed the red blood-cells with solutions of pure saccharose of a strength of from 56 to 70 per cent. Normally these solutions offer very high resistance to the passage of electric currents, but after they have been used to wash the red blood-cells their conductibility of electricity is noted to have increased to a very large degree. This could hardly hold unless the diffusion of the salts contained in the elements in question had taken place and this especially in the absence of all solutions of hemoglobin. It therefore appears that in the study of the resistance of the red blood-cells, it is necessary to determine not only the manner in which their coloring matter behaves, but also what becomes of the salts which make part of these elements.

J. **GNEZDA**, addressed a note to the Society in which he established the fact that one can observe in certain morbid symptoms independent of all processes of putrefaction within the intestines (mental depression, diabetes, scarlet fever, measles, etc.,) the production of an excess of urea and proportionately of indoxyl within the urine. This determination makes it possible to admit that there exists within the organism a source of indoxyl of a non-bacterial origin, resulting without doubt from the oxidation of an indoxylic group derived from the albuminoid molecule. This oxidation is allied to the formation, at the same time, of a certain quantity of urea.

H. **GAUSSE** contributed a communication on the significance of the presence of fatty acids in drinking-water. The amount of these acids in water was determined by means of a process based upon the insolubility of the barytic elements of these acids. The proportion of fatty acids in drinking-water usually varies according to the season from 0.00001 grams to 0.0001 grams to a liter. These substances are not available themselves, but they indicate a contamination of water because they proceed at once by direct route or by filtration from the waters of sewers or stables or the refuse of certain industries.

BAZY, at the Surgical Society, February 26, 1902, continued the discussion of the subject of chloroform narcosis which was held over from the symposium of the last two meetings. He said that the existence of lesions of the heart valves does not constitute a contraindication to the use of chloroform. He has had numerous occasions to operate on patients afflicted with valvular lesions and in them the use of chloroform caused no trouble. On the other hand a myocarditis presented a much more important disease. Without wishing to deny the existence of reflex symptoms and sudden heart-failure due to chloroform itself, he says there exists with regard to this anesthetic, as with regard to all potent medicines, wide variations of individual susceptibility. Moty has reported only one death due directly to chloroform, but notwithstanding this good record, he is afraid of this anesthetic and considers that whenever possible it is wiser to employ local anesthesia by means of cocaine. Guinard said he believed that the subjects of heart disease could be put under chloroform, but if one were to take account of all the restrictions put upon this subject it would be only in those cases in which the valvular lesions were fully compensated in the circulation that chloroform could be used with no less danger than in persons of perfectly good health. Broca said that in one of his cases of fatal chloroform narcosis, which he reported at the last meeting, at the autopsy the thymus gland was found hypertrophied. Michaux expressed astonishment that in all the discussions previously held on this subject no one had mentioned rhythmic traction on the tongue which he has seen repeatedly do good work in bringing a person out of too deep chloroform narcosis. Poirier places great confidence upon artificial respiration without traction on the tongue.

The last speaker continued with a report of an interesting gastric case. The patient was a woman who entered the hospital with a diagnosis of cancer of the stomach at the pylorus. He made an exploratory laparotomy which did not show any tumor of appreciable size at this point or in the duodenum, or in the liver. The cause of the trouble was a spasm of the pylorus. On the anterior aspect of the pylorus he found a small elevation the size of a small nut, which he removed. Histological examination showed that it was a pure fibroma. Recovery followed.

TUFFIER reported in the name of Millian and himself the fact that they had found peculiar changes in the blood, apparently caused by hydatid cysts, partaking chiefly of the nature of eosinophilia. It seems possible that the parasite itself caused these reactions. In only one case among twelve have they been in error after an examination of the blood. After the establishment of the eosinophilia they made the diagnosis of hydatid cysts. There existed in reality myxoma.

GAUCHER, at the Medical Society of the Hospitals, February 28, 1900, said that, according to his researches, of all the soluble salts of this metal, the neutral lactate of mercury is the one to which preference should be given, because of its great solubility and because it can be preserved almost indefinitely in solution, and because it is free from any irritating reaction and is very rich in mercury, more so than the benzoate. It may be given by the mouth in daily doses of four teaspoonfuls of a solution of 1 per cent., preferably in a little sweetened water, or by subcutaneous injection of 1 c.c. of a 1-per-cent. solution daily. His verdict is that this neutral lactate of mercury may be substituted for all other solutions of mercury in the treatment of syphilis.

TERRIER communicated an observation on a soldier who was severely attacked in the course of an acute articular rheumatism with a violent pain in the head, delirium, convulsions and a decrease of the pain in the joints at the same time. Death followed during the night of the same day on which these symptoms appeared. A puncture in the spinal cord a few hours before death brought a strong jet of clear fluid, which, after centrifuging, produced only a slight deposit of white blood-cells. All efforts to find bacteria in this fluid were futile. At the autopsy there were no lesions of the meninges or the brain. The only peculiarity which seemed to characterize this case of cerebral rheumatism was the high tension of the cephalorachidian fluid.

BYWAYS OF MEDICAL LITERATURE.

PRELIMINARY EXAMINATIONS FOR MARRIAGE.

WE may be prone to think that it is only in these latter days and perhaps in the distant West that the suggestion for the advisability of preliminary examinations before marriage in order to decide as to the suitability of the parties for the contraction of matrimony was made. As a matter of fact, however, this idea has long been in the minds of sociologists bent on the improvement of the race. The following curious passage occurs in the "Utopia" of Sir Thomas More, the English Chancellor, who was put to death by Henry VIII. It was written in the very early part of the sixteenth century.

"In choosing their wives they (the supposed inhabitants of Utopia) use a method that would appear to us very absurd and ridiculous, but it is constantly observed among them, and is accounted perfectly consistent with wisdom. Before marriage some grave matron presents the bride naked, whether she is a virgin or a widow, to the bridegroom, and after that some grave man presents the bridegroom naked to the bride. We, indeed, both laughed at this and condemned it as very indecent. But they, on the other hand, wondered at the folly of the men of all other nations who, if they are but to buy a horse of a small value, are so cautious that they will see every part of him and take off both his saddle and all his other tackle, that there may be no ulcer hidden under any of them, and yet, in the choice of a wife, on which depends the happiness or unhappiness of the rest of his life, should venture upon trust and only see about a hand's breadth of the face, all the rest of the body being covered, under which may lie hid what may be contagious as well as loathsome. All men are not so wise as to choose a woman only for her good qualities, and even wise men consider the body as that which adds not a little to the mind, and it is certain that there may be some such deformity covered with clothes as may totally alienate a man from his wife when it is too late to part with her. If such a thing is discovered after marriage, a man has no remedy but patience. They, therefore, think it is reasonable that there should be good provision made against such mischevous frauds. There was so much the more reason for them to make a regulation in this matter, because they are the only people in these parts that neither allow of polygamy nor of divorces."

This method may be commended to the attention of Western law-makers whose zeal for race progress outruns their ethical sense. There is but one difficulty Edmund Clarence Stedman, the poet and critic, said not long ago that the writing of blank verse was like standing nude for inspection, "only very few can stand the test." This test might limit even more than at present the number of marriages, an eminently undesirable consummation not at all to be wished for, especially with the already low and lowering birth-rate in this country.

DANGEROUS FAMILY REMEDIES.

In the "Bits of Common Sense Series" by Marian Harlan, one of the little volumes is on "Health Topics." Most of the advice given is excellent. Her position with regard to patent medicines is especially interesting, because of the thorough-going common sense displayed. Some of the maxims with regard to the sick-room, as "Don't mix medicine in the sight of the one who is to take it" and "Don't whisper in a sick-room, even when the patient is presumably asleep or in a stupor," "Don't wear rustling gowns in a sick-room," "Don't discuss symptoms in the hearing of the sufferer" are especially suggestive. Here is a paragraph that might well be read by every physician to anxious friends on his first visit to a patient: "Avoid asking the patient often, 'How are you feeling now?' A friend, who had passed through two years of trying invalidism said to me once with a nervous laugh after her devoted husband had left the room, 'Do you know, that was the fifty-ninth time he has asked me to-day 'How are you now, my love?' If he puts the question sixty times, I *must* scream!'"

There are some things, however, that are not quite so worthy of approbation. For instance with regard to the family medicine-chest, the writer says: "The sensible mother will stock her medicine shelves so intelligently that she will be surprised at the scantiness of the store. If she be allopathic, paregoric, ipecac, rhubarb, aconite and chlorate of potash will carry her through ordinary cases of illness. When these do not meet the demand it is time to send for a physician. The homeopathist with pulsatilla, coffee, mercurius and spongia may consider herself well equipped."

So far as the so-called allopathic drugs are concerned there are at least two of those recommended as seemngly harmless that medical men would not like to see in a family medicine-chest, nor think of as being used without very careful directions in children's ailments. Aconite and chlorate of potash are both of them too dangerous to be handled, especially in cases of children's illnesses, by anyone but a physician. Most physicians would also object to the free use of paregoric. Aconite, of course, is a dangerously poisonous drug and well known as such. Chlorate of potash has become of late years a popular medicament. That it can be used with impunity is an entirely mistaken notion. Many serious cases of nephritic irritation have resulted from its too liberal employment. When kidney disease already exists, it is almost criminal to use it in any quantities. Certain individuals seem to have an idiosyncrasy for it, which makes even small doses dangerous.

POSSIBILITIES IN HEALTH ADAPTATION.

In the course of the present Balzac revival a number of interesting details from the private life of the great French writer are finding their way into print. He was not infrequently accustomed to lock himself up in his room for as many as twenty or thirty days at a time, seeing no one and keeping the curtains closed and the lights continually burning even in broad daylight. The only human being he would see at such times was his servant for whom he rang when he felt the need of food. This he washed down with numerous cups of coffee. A writer in the February number of the "Bookman" gives some details of Balzac's appetite when, after a writing bout such as described, he permitted himself to indulge in the pleasures of the table.

"His capacity was Gargantuan, as may be judged by this menu of a dinner he once ordered at Véry's for himself alone: One hundred Ostend oysters, twelve mutton cutlets, a duck, a pair of roast partridges, a sole à la Normande, without counting the hors d'œuvres, side-dishes and fruits, among which were some Doyenne pears which he swallowed by the dozen and fine wines, coffee and liquors."

Balzac must certainly have been as great a gastric genius as he was an intellectual one to stand all that and survive.

NURSES AND SUSCEPTIBLE CONVALESCENTS.

The recent revival of "The Notorious Mrs. Ebbsmith" by Mrs. Campbell brought the subject of the trained nurse and her influence over the mind of convalescent patients once more to the fore. The "New York Sun" had a recent article on the question, some passages of which seem worth quoting. "'Isolde was the great original trained nurse,' remarked a woman coming out of the Opera House last Saturday afternoon. 'That little episode between her and Tristan that Wagner takes four hours to tell us about is the first trained nurse flirtation on record. If you have studied your libretto carefully, you will recall how Isolde, a past mistress in the art of healing, first won Tristan's affection by nursing him back to life after a serious wound. The two are finally brought together again just before death, which in their case, as presented by Wagner, may be literally called lingering, by Isolde's ability as a nurse. Of course, the case is idealized and immortalized by the great musician dramatist, but the elemental conditions are the same. I wonder how Wagner, by the way, would have treated a case I know, where the son being very susceptible and having fallen ill of typhoid fever, the father in engaging a nurse requested the hospital authorities to pick out one just as homely and unattractive as possible. The specimen that presented herself according to these instructions was worse than the father's fondest hopes had imagined. But, alas, the father had failed to gauge the son's susceptibility. In spite of everything, the boy fell in love with the nurse and as soon as he was well he insisted upon marrying her. And now the father mourns that he did not tell them to pick out the youngest and prettiest nurse they had. Whatever she was, the boy was bound to fall in love with her, it seems, and she might just as well have been attractive as unattractive.' "

We hope that this will prove a proper warning to anxious parents not to interfere any more than they can possibly help with the inevitable designs of the Providence that rules over matrimony. Dan Cupid will not be foiled and the only course open to reasonable relatives is to submit gracefully. We hope, too, that this will serve to remove some of the prejudice against attractive nurses that at one time threatened to impair seriously the income of the unfortunately too fair members of the nursing profession.

Work and Suffering.

We spoke in a recent instalment of "The Byways" of the therapeutic effect of such a book as Stevenson's "Autobiography," with its lessons of patient endurance of sickness and pain in the midst of work that would seem more than enough for the same length of life in a healthy man. Another such therapeutic book has recently appeared in the volume of letters of John Richard Green which has just been issued under the distinguished editorship of Mr. Leslie Stephen (Macmillan & Co.). The work is more than a mere collection of letters; it is so designed with connecting links and skilfully interpolated narrative that it accomplishes all the purposes of a biography. Green was born in 1837 and died in 1883 at the comparatively early age of forty-six. As men go in literature and history he was a young man. Nearly all his life he had been an invalid, yet the volume of work accomplished by him in the midst of his invalidism may fairly be described as prodigious. A list of his works fills two pages exclusive of translation, magazine articles and some eight score contributions to the "Saturday Review" in its palmy days. "His histories alone," says a reviewer in the "Contemporary Review" of January, 1902, "might well have engaged the full energy of a stronger man. But, like Stevenson, he was invincibly brave in illness and an incessant worker." In the midst of so many delays in his work from illness of various kinds, there were occasional fits of depression, but the prevailing note of his letters is that of supreme cheerfulness. The majority of the letters are written to personal friends and we might have expected to have had more airing of his personal suffering, but there is very little of this. The book ought to prove an excellent stimulant tonic in depression to those who have so much less reason for downcast feelings than had Green or Stevenson in the midst of their work.

SOCIETY PROCEEDINGS.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

The Sixteenth Annual Meeting, Held at Atlantic City, April 29 and 30, 1902.

First Day—April 29th.

Technic of Prostatectomy.—Dr. John P. Bryson of St. Louis described the technic as follows: After the usual preliminary preparations a broad, grooved staff is introduced and a free perineal incision made, opening the urethra just in front of the apex of the prostate. The knife, after entering the groove of the staff, is pushed far enough back to incise the ring at the apex of the prostate. The forefinger follows well into the prostatic urethra and the staff is withdrawn. The finger quickly exposes the prostatic urethra and ascertains whether the vesical outlet can be reached; after which the forefinger of the right hand in the rectum permits a bimanual examination of the prostate within reach. Guided by the finger a blunt instrument is passed into the urethra and made to puncture the most prominent part of the mass from the urethral side, and the instrument is pushed well into the swelling. On its withdrawal the finger tears its way into the center of the mass which, even in fibrous prostates, is comparatively friable. The mass is opened through to its capsule and the finger swept round its periphery without tearing the prostatic capsule or fibrous sheath of the gland. The floor is felt to tear longitudinally. After the lobe has been loosened all around there remains the attachment to the urethra in detaching which care must be taken not to remove too much of the sides nor any of the roof of the urethra. The hypertrophied lateral lobe is removed, to do which one has often to go well up behind and beside the neck of the bladder; yet it is possible to do this and keep within the capsule. Very little bleeding follows. The detached mass may be delivered with ordinary lithotomy forceps, or it may be broken up with the finger or divided with scissors. This process is repeated on the opposite side, after which a median posterior segment remains to be dealt with, which can usually be done by sweeping the finger from side to side, pushing it backward in such a way as to detach it well up behind the bladder and roll it downward. One may often be surprised to find that one can enucleate what one has just felt as a pedunculated intravesicular projection or a growth *en collerette,* bringing it well down by use of the forceps apparently without disturbing the fibrous ring at the vesical outlet. The more the detached mass is rolled downward by pulling upon its upper surface the less mucous membrane is removed. Usually the finger may be passed through the ring into the bladder which may be explored thoroughly. The bladder is then irrigated with hot saline solution until the oozing ceases. If the finger be introduced, the floor and the sides of the urethra will be found intact, the latter often hanging loosely against the outer wall or sides of the cavity from which the growths have been removed. A large cavity is made out between the lower part of which and the rectum there is felt a thin wall. Into the lower part of this, hinged posteriorly about the ring at the vesical neck, is an irregular flap of mucous membrane, which can be pushed back and often made to occlude the vesical outlet. Care must be taken not to double backward and push this flap into the bladder when the large drainage tube is introduced.

Surgical Relief of Prostatic Hypertrophy.—Dr. Charles H. Chetwood of New York read this paper. The following conclusions were reached: Palliative measures should not be persisted in when they fail, after reasonable duration, to produce and maintain an abatement of symptoms. A first infection of the bladder is not sufficient excuse for operation unless palliative measures fail to subdue promptly inflammatory conditions. Recurring infection of the bladder or ascending infection of the kidney is sufficient warrant for operative interference. There is a growing tendency toward earlier operation than was formerly practised. The greater number of cases of prostatic hypertrophy can be satisfactorily reached through a perineal incision. In the large majority of cases, the requirements of an operation upon the prostate consist in the removal of the obstructive area and depressing the bladder opening into the prostate, so that the *bas fond* may be properly drained. In many cases the obstructing area of the hypertrophied gland can be satisfactorily removed through a perineal opening by means of the galvanocaustic incisions. Perineal galvanoprostatotomy is preferable to the Bottini operation on account of its greater accuracy and lower mortality.

Bottini Operation.—Dr. Henry H. Morton of Brooklyn reported a case in which this operation had been performed on a patient seventy-eight years of age, who for one year prior to the operation had been complaining of tenesmus and frequent and painful urination. At the time of his admission to the hospital there was complete retention. An examination revealed twenty-four ounces of residual urine. At this time the prostate was 1½ inches in diameter and cystoscopic examination showed an enlarged middle lobe and trabeculated bladder. The urine was acid, cloudy, with a specific gravity of 1016, and showed a slight sediment which contained pus-cells but no casts. Bottini's operation was performed, three incisions being made, the anterior one being 2 cm., the posterior 3 cm. and the left lateral 2 cm. in length. For three days after the operation catheterization was necessary, at which time the patient began to urinate spontaneously. Eleven days after the operation micturition occurred every hour during the day and five times at night, catheterization being performed daily with a withdrawal of from three to four ounces of residual urine. One month after the operation the patient urinated six times daily and four times during the night, the stream, although slow in starting, being ejected with good force. Up to this time the patient continued to be in good general condition and cystoscopic examination showed the posterior lobe of the prostate with a cleft in the middle made by the Bottini incision. Subsequently the patient's appetite and general vitality began to decrease and death ensued fifty-four days after the operation. A complete autopsy was not permitted, but an examination of the bladder showed it to be contracted and to contain a small quantity of thick and foul pus. Many small necrotic areas were scattered about the surface and a number of small sacculi, one containing a little calculus, were observed. Traces of the posterior incision were very distinct. The interureteric fold of the mucous membrane had been divided, and the middle lobe of the prostate cleft in halves, necrotic areas being visible at the apex of each half. The left lateral incision had not split the prostate, but merely separated the mucous membrane from the superior surface of the prostate, and no traces of the anterior incision were visible. The kidneys were not examined, but, as previous urinalyses had revealed the absence of casts, the cause of death was probably cystitis, which had been greatly aggravated by the operation. The middle lobe of the prostate was completely divided into two halves. The reduction in size of the prostate following Bottini's operation probably results from the sloughing subsequent to the burning. The difficulties of placing the instrument in a correct position are shown by the fact that the left lateral incision did not divide the left lobe of the prostate, as intended, but only lifted up the mucous membrane covering it, while the anterior incision was found not to be made at all. The obstruction to urination was relieved by a single incision through the posterior median lobe of the prostate, and death did not occur until seven weeks after the operation, at which time the relief was complete. The patient required bladder washing and had no home, and for these reasons was kept in the hospital until his death; had he left the hospital as soon as he was able to go after the operation, his case might have been reported as one of complete retention of urine in a man seventy-eight years of age entirely cured by Bottini's operation.

Prostatectomy.—The same author reported a prostatectomy performed on a patient aged sixty-two years, who entered the hospital suffering from retention of urine due to prostatic enlargement. Previous to his admission attempts to introduce a catheter had resulted in a false passage into the prostate. At the time of his admission no instrument would be passed into the bladder, and external urethrotomy without a guide was performed. For three weeks subsequent to this the bladder was drained through a No. 30 catheter, at which time it was removed, but, owing to the fact that the patient could not urinate, it was reintroduced and allowed to remain two weeks longer, when a prostatectomy was performed. Suprapubic cystotomy to depress and hold the prostate was performed and the perineal wound was used for shelling the prostate out from the capsule. Three tumors, from ½ to 1½ inches in diameter, were enucleated without difficulty, and no hemorrhage followed the operation. Drainage was established through perineal and suprapubic tubes. The patient did well for three days and the drainage was perfect, but later sepsis developed and ten days after the operation death ensued. The autopsy showed the suprapubic wound to be intensely infected; the cavity from which the prostatic tumors had been removed was healthy in appearance and indicated that it would have healed entirely by granulation. The obstruction to urination had been entirely relieved by the enucleation of the prostatic tumors.

Removal of all Three Lobes of the Prostate by Suprapubic Cystotomy.—Dr. Charles L. Gibson of New York presented this specimen which was removed from a patient sixty-two years old, who gave a history of increasing obstruction of urine for the past six years. Urine frequently dribbled away. Examination *per rectum* revealed both lateral lobes enlarged. On several occasions fifteen ounces of residual urine were obtained. Moderate cystitis. No kidney lesion was evident. Prostatectomy by the Alexander technic was undertaken, but the first step revealed the bulging of the prostate into the lumen of the bladder so distinctly that he determined to remove the enlarged portions by this direct approach. The vesical mucous membrane was incised over the urethral orifice and he then found that his finger could sweep easily all around the prostate; so, in a few seconds he brought out the whole prostate *en masse*. The urethral outlet must have been avulsed, but of this he was not aware, so the prostate was simply shelled out without any force and without any bleeding. The operation was completed by adding a perineal boutonnière for drainage. Four days after operation the dressings were changed and the bladder was washed out; the patient's condition appeared to be good, the temperature was normal, and there was a free secretion of urine. Six hours later the patient died without any particular manifestations. No autopsy. He presented the case, not to recommend that the prostate should be removed *in toto* with the necessary drawback of destroying the urethral outlet, but for the purpose of emphasizing how easily the prostate, or portions of it, can be removed without destruction of tissue or hemorrhage provided one clearly enters the essential line of cleavage.

Dr. Eugene Fuller of New York had performed twelve perineal prostatectomies during the past year and a half, with but one death, which resulted from delirium tremens. The oldest patient was eighty-one years old and his condition was complicated by the presence of a mulberry calculus which he had to remove by the suprapubic route. Another of his patients had tuberculosis of one lung and spinal anesthesia was administered successfully. The patient died of general tuberculosis seven or eight months after the operation.

Dr. Francis S. Watson of Boston said that two-thirds of all cases of prostatic enlargement would be found within reach of the finger after a perineal incision through the urethra. An elaborate armamentarium he did not believe to be necessary, and he laid particular emphasis upon the use of the finger in removing this gland.

Dr. George Chismore of San Francisco had had an opportunity of observing the work of Dr. Goodfellow of San Francisco whose method he described. Especial importance was placed upon putting the patient in a position with the thighs strongly flexed upon the chest. He reported eight cases, all bad ones, occurring in old men, two of them being over eighty years of age. Of this number two died. In one of these there was an encysted stone and a suprapubic opening was necessary to remove it, although it was not larger than the end of one's thumb. The second patient died partly as the result of an opening made into the rectum during the operation.

Operative Treatment of Hypertrophied Prostate; with Presentation of Specimens and Models Illustrative of that Condition.—Dr. Bransford Lewis of St. Louis said that while claiming for prostatic surgery the merit of wonderful progress in the last fifteen years, he thought that the profession was not above criticism in certain respects; that operators were much inclined to follow beaten tracts and routine procedures rather than base their operative treatment on the special conditions found in each individual case. He mentioned some points in the histories of some of his cases which had a bearing on the subject. The practical lessons derived from these cases were that the proper selection of the operative procedure is of the greatest importance in attaining successful results. This was satisfactorily explained by the dozen or more pathological specimens and models of hypertrophied prostates exhibited by him. In these the various forms of prostatic enlargement and obstruction were clearly illustrated—the prostatic bar, the bilateral hypertrophy, the intravesical tumors and projections, sessile and pedunculated, the nodular valves and the median outgrowths, adenomata, etc. From all these cases it was perfectly evident that no one operative procedure could possibly fit all cases, and that the operation should be selected according to the cases at hand, rather than the personal inclination of the operator. The conditions favorable for the several operations in vogue were summed up as follows: Favorable for the suprapubic route: (1) General enlargement of the prostate, with extreme intravesical projection of the median or lateral lobes, diminishing their accessibility from the perineum; (2) marked pedunculation of the intravesical tumors, with absence of obstruction from other sources. Favorable for the perineal route: (1) General hypertrophy, involving the lateral lobes, without extreme intravesical projection; (2) large or very thick bar formation; (3) severe compression of the urethra between massive lateral lobes; (4) excessive development of the prostate in the direction of the rectum; (5) in most cases when the patient is in good general condition, is not too aged, and there is not a special indication favoring one of the other procedures. Favorable for the Bottini: (1) Cases of extreme debility, or of extreme age, unable to stand one of the severer operations; (2) cases of bar or median sessile obstruction of not too great dimensions; (3) in complete collar formations; (4) Horwitz says it should be employed as a prophylactic against further obstructive tendency at the beginning of catheter-life.

Dr. F. L. Sturgis of New York said that the removal of the prostate and ejaculatory ducts prevented the flow of the prostatic secretion which was so essential to the vitality of the spermatozoa and therefore tended to render the male sterile. On this account he believed that some partial operation, like the Bottini, was preferable.

Dr. Eugene Fuller of New York said that if one had to deal with 100 cases of prostatic enlargement, 75 of them would offer something new. In cases in which there were troublesome hernias, if the bladders be opened and drainage instituted the tenesmus and straining cease and often the hernias disappear.

Dr. F. Tilden Brown of New York said the use of the cystoscope was unsatisfactory in determining just what one had to deal with. If there were any excuse for making a suprapubic opening he believed such an opening should be made use of for the introduction of the cystoscope with which one could look directly down upon the trouble and learn its real nature. Recently he had an opportunity to examine two cases through a suprapubic opening and he had learned a great deal that he never would have learned if the cystoscope had been introduced through the urethra.

Dr. H. H. Young of Baltimore considered the Bottini operation one of great value. He had had nineteen cases over seventy years old, three over eighty years old, without a single death following the Bottini operation, and in all but two good results followed. Thirteen of these used the catheter and all but two were able to discard it.

Dr. William T. Belfield of Chicago said that nothing was known regarding the etiology of this condition. Some of the most violent cases of prostatism occur in those who have no prostates at all. He thought the importance of enlargement of the prostate as a cause of the trouble was overestimated.

Note Upon the Detection of Stone in the Kidney by Skiagraph, with Specimen.—Dr. James Bell of Montreal showed photographs of a case in which the skiagraph had demonstrated a stone with perfect satisfaction. At the time of operation it was shown to be in the situation and to be of the size shown in the skiagraph.

Second Day—April 30th.

The morning session was devoted to a general discussion of the Surgical Treatment of Genito-Urinary Tuberculosis.

Renal Tuberculosis.—Dr. F. Tilden Brown of New York said that at the Presbyterian Hospital during the last ten years there had been 1,427 necropsies, of which number 258 (18 per cent.) showed tuberculous lesions somewhere in the body and 48 of them (18.5 per cent.) showed renal tuberculosis. Of the latter number 32 occurred in males and 16 in females; tuberculous lesions existed in both kidneys in 39, while but one kidney was affected in 9, 5 of these involving the right and 4 the left kidney. Of the 258 tuberculous bodies it was shown that the kidneys were more commonly involved than the spleen, liver or adrenals. During the same time there were in the hospital 78 cases diagnosed as renal tuberculosis, of which number 13 (16 per cent.) had nephrectomy performed, with but one death occurring two months after the operation; at the autopsy the other kidney was found to be involved. The vast majority of cases that come to autopsy which show tuberculous lesions in the kidney were of the disseminated miliary type and with such a class of patient, of course, surgeons have not to deal. At necropsies as high as three or four per cent. of healed cases of pulmonary tuberculosis have been found; whereas it was of the rarest occurrence to find at autopsy any evidence of Nature's efforts to attempt to cure renal tuberculosis. From a surgical standpoint he did not believe any surgeon would hesitate to perform an immediate nephrectomy if he was sure that one kidney contained the only appreciable focus of the tuberculosis. Through the courtesy of his colleague, Dr. Tuttle, he was able to show a picture of a case of pseudotuberculosis of the kidney, a very rare condition, first described in 1891.

Tuberculosis of the Seminal Tract.—Dr. Hugh H. Young of Baltimore presented an exhaustive résumé of the literature bearing upon the question of pathology and treatment; his conclusions were as follows: The disease may begin primarily anywhere in the tract, but usually it starts in the epididymis. The bacilli which are being constantly carried up with the testicular secretion along the vas deferens very soon localize in the ampulla of the vas, the ejaculatory duct, the seminal vesicle, and the adjacent portion of the prostate. The testicle is very seldom the point of primary origin, and it becomes involved secondarily generally much later than the seminal vesicles, though it seemed not to be so immune as formerly supposed. Tuberculosis frequently travels from the kidney to the prostate and from there involves the testicle, but it is almost never primary in the bladder. There are to be found in literature 35 cases in which the seminal vesicles have been removed for tuberculosis; of these 14 will not be considered because the operator failed to state ultimate results. Of the 21 which were followed, 6 died, 5 had recurrences, and 10 were classed as well. Only 8 cases were followed over one year and of these 2 died, 2 had perineal fistulæ, and 4 were classed as cured. In only one of the 6 fatal cases was pulmonary involvement present before operation. Considering, then, that both seminal vesicles were involved in but 12 cases, the infrequency of lung and bladder tuberculosis, these 35 cases were not the most intensive, and, with cures claimed in less than 50 per cent. and with only 8 followed more than one year, the results obtained by operative removal of the tuberculous seminal vesicles were indeed unsatisfactory, and apparently not nearly so good as when a partial operation upon the external disease in the testicle alone is attempted.

Tuberculosis of the Testicle.—Dr. Paul Thorndike of Boston presented a short paper on this topic based upon 75 cases of the disease, collected from the wards of the Boston City Hospital. Sixty-seven per cent. of these cases occurred between the ages of twenty and forty years. Sixty per cent. involved the left testicle. Eighteen per cent. involved both testes. Thirty-six per cent. involved the right testis. Gonorrhea had preceded the development of the disease in 30 per cent. of the cases, and trauma in 12 per cent. The epididymis alone was involved in 42 cases. The epididymis and testis were involved in 32 cases. The vas deferens was palpably involved in 12 cases; the seminal vesicles in 16; the prostate in 13 cases. His paper discussed two points, first, the feasibility of removing the epididymis and leaving the testis behind in proper cases; second, the benefit to the patients of operations which remove only a part of the disease in cases in which total eradication of the tuberculous process is impossible.

Genito-Urinary Tuberculosis.—Dr. Paul Thorndike of Boston presented two cases. In the first the deposit in the prostate was shown not alone the only manifestation of tuberculosis in the urogenital system, but also the only one in the body. In the second case, in a patient with Addison's disease, it was clearly shown that the ureter on the same side as the diseased adrenal had been infected through its mucous lining by the tubercle bacillus carried there presumably by the urine secreted by the kidney, the adrenal of which was tuberculous.

An Analysis of 96 Operations for the Relief of Tuberculosis of the Testicle.—Dr. Orville Horwitz of Philadelphia presented the following conclusions to his paper: (1) A primary tuberculous infection of either the epididymis or testicle may occur, the former being by far the more common. (2) A primary infection of the epididymis, secondarily that of the testicle is more common than the descending one. (3) Primary involvement of either the epididymis, or testicle, usually takes place through the circulation; the soil being predisposed to the location of the tubercle bacillus either by a slight traumatism or by some infecting condition which has given rise to inflammation of the organ—most commonly an attack of gonorrhea. (4) Secondary tuberculous involvement of the epididymis or testicle sometimes follows a primary focus of the disease in other portions of the body; more commonly in those organs that are in a direct anatomical connection with the sexual glands, such as the seminal vesicles, the prostate, urethra, bladder, ureter, or kidney. (5) The invasion of the testicle may be rapid, associated with acute inflammatory symptoms, an abscess soon developing; or the onset may be slow, the symptoms simulating those of chronic syphilitic orchitis or of malignant disease of the organ. (6) The tuberculin test should always be employed in doubtful cases in which only one focus of the disease is known to exist. (7) In doubtful cases associated with hydrocele, the fluid should be examined for the tubercle bacilli and inoculating experiments made. (8) The injections of either emulsions of iodoform or of sulphate of zinc into the diseased part are not to be recommended. (9) In all cases of encapsulated caseous nodules quiescent in the epididymis, epididymectomy should be performed. (10) Epididymectomy together with resection of the vas deferens is not attended by either atrophy of the testicle or sexual weakness. (11) The drainage of tuberculous abscesses followed by the use of the curette is only to be employed when radical treatment is not permissible, as it is attended by more or less danger and is generallv unsatisfactory in its results. (12) In instances in which the epididymis alone is involved, a resection of the diseased structure is all that is required; whether a partial or complete resection of the vas deferens is to be undertaken or is still undecided. (13) Double orchectomy should be performed when both glands are diseased, provided there is not extensive coexisting tuberculous infection of other organs. (14) Whether infected seminal vesicles should always be removed at the time that the epididymis or testicle is resected is a question open for discussion. From the fact that in a large majority of cases the removal of the primary seat of the disease is followed by a subsidence of the tuberculous involvement of the vesicles, it is deemed wiser as a rule to wait and remove the vesicles later if necessary. (15) Hygienic and climatic influence play important parts after operation in fortifying the constitution against further invasion as they do in other tuberculous conditions. (16) The antituberculous remedies are of great value in controlling the disease and should be employed in conjunction with whatever surgical procedure may be deemed necessary.

Teratoma of the Testicle; Report of Case; Presentation of Photographs.—Dr. James R. Hayden of New York reported the case of a patient who, seven years previously, had had an epididymitis complicating a second attack of gonorrhea; since then the right testicle had remained a little large. Two and a half months before admission to hospital it began to increase in size, became firm and hard and during the past few weeks had become quite painful, with a feeling of weakness when standing, but which disappeared when walking. Examination showed the right half of the scrotum occupied by a smooth, painless, heavy elastic tumor, the circumference of which was eleven and three-quarter inches. The scrotum was normal in appearance and non-adherent. The tumor was removed and the pathologist reported that sections of it showed that it was mostly composed of sarcomatous and carcinomatous elements and undoubtedly belonged to the class of teratomata. The sarcomatous tissue was both small round-celled and small spindle-celled, with a few giant cells. The cancer was adenocarcinoma and practically replaced all the glandular elements. A considerable cartilaginous element of the hyaline variety was present, with here and there a beginning ossification. The tumor taken as a whole on account of its composition and the large proportion of cells over basement and intercellular substance should be regarded as decidedly malignant.

Gangrene of Penis; Report of a Case, with Presentation of Photographs.—Dr. James R. Hayden of New York reported the case of a patient, fifty-seven years old, married, a printer by occupation, who was admitted to Bellevue Hospital, January 15, 1902. He denied ever having had any form of venereal disease, local traumatism, or cauterization. He was a paranoiac, having various delusions as to the cause and nature of his present trouble, the rather unsatisfactory history of which was as follows: About two weeks prior to admission he noticed a small black spot on the end of the glans penis which increased in size and gradually spread over the rest of the organ, giving rise to an offensive odor. Aside from the mental condition, the patient appeared to be a healthy man in all respects. The entire penis from the meatus to within one inch of the abdominal wall was greenish-black in color, dry, hard and gangrenous, with a most offensive and penetrating odor. The line of demarcation was very distinct. The urine was passed from the under surface and about the middle of the penis. The inguinal glands were not involved. The parts were frequently irrigated and dressed with hot bichloride solution, as a result of which the slough was removed in a few days, leaving a raw and bleeding stump about one and a half inches in length, from the end of which, at the lower border, the urine was passed in a good stream. Healthy granulations were established and the entire stump was covered with skin grafts which was followed by a favorable outcome, with the corpus cavernosa completely covered with sound integument. The patient left the hospital six weeks after his admission.

Officers for the Ensuing Year.—President, Dr. Paul Thorndike, Boston, Mass.; Vice-President, Dr. Edwin C. Burnett, St. Louis, Mo.; Secretary, Dr. John Vanderpoel, New York; Council, Dr. William T. Beifield, Chicago, and Dr. James R. Hayden, New York. Next place of meeting, Washington, D.C.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, Held April 8, 1902.

The President, Joseph Collins, M.D., in the Chair.

A Case of Asthenic Bulbar Paralysis.—Dr. George W. Jacoby presented a young woman with asthenic bulbar paralysis. He said that this was only the second case that he had seen. The other case was that of a young man who now presented an interval that had lasted for three years. From the histories of other reported cases it was not probable that the man had permanently recovered. The patient presented was a girl of twenty years, who had been perfectly well until last May, when while reading aloud her voice was noticed to falter. Within a few weeks this became quite noticeable even on speaking. About this time there was some double vision. Later on there were nasal speech and regurgitation of fluids through the nose. Only within the last two months had she developed a slight weakness of the right hand. He called attention to the broadness of the mouth, the thickness of the lips, the almost expressionless appearance of the face and the difficulty of pointing the mouth as in the act of whistling. There is inability to completely close the eyes, and the reflexes are exhaustible.

An Experimental Study of the Reflexes in Total Transverse Lesions of the Spinal Cord.—Dr. William Aldren Turner of London presented a paper on this subject, considering more especially the knee-jerks. He said that the reflex phenomena varied considerably, depending upon whether they were studied experimentally or clinically. After commenting briefly on the literature, the author said that a weakening or temporary abolition of the knee-jerks was more commonly noted after high than after low transections, but in no instance was complete absence observed. The influence of shock in laboratory transections seemed to be particularly small, and when present its effects were limited almost entirely to the distal parts, and there was little difference in the severity of the shock whether the transection was in the lower thoracic or in the cervical region. Sherrington was quoted as saying that in the monkey spinal transection usually depresses the knee-jerk for a longer time than in the cat or dog, and that spinal transection above the lumbar enlargement renders the jerk more brisk than normal after a short period of depression. Dr. Turner said that many years ago when working with Dr. Ferrier on the experimental lesions of the cerebellum, it had been noticed in a case in which the section had been made at the eighth dorsal segment by means of a knife, that the knee-jerks were brisk and increasing immediately afterward, and that they lasted for four months. The speaker then described some recent experiments made by him on monkeys. A transection was made upon a rhœsus monkey at the level of the fourth dorsal nerve, and the knee-jerks were found to be brisk. A crossed adductor jerk was also present. The animal lived for five days. In another monkey of the same species the section was made at the level of the fourth dorsal segment, a hemisection having been first made and the reflexes tested, and then the animal reanesthetized and the section completed. In this case the knee-jerks were brisk and there was also a crossed adductor jerk. The animal lived two days. Another rhœsus monkey was then subjected to section by the knife at the level of the first dorsal nerve. In this experiment the knee-jerks were not obtained after the first quarter of an hour. There was a crossed adductor jerk on both sides and a superficial anal reflex. The animal died three days later. In another rhœsus monkey the section was made by ligature at the level of the ninth dorsal nerve. After a preliminary depression the knee-jerks were brisk, and the crossed adductor jerk and the superficial anal reflex were present. The animal lived for four days. By contrasting these two experiments it seemed as though the method of section was of some importance, influencing, at least temporarily, the knee-jerks. These experiments certainly showed that the effect on the knee-jerks was influenced by the level at which the section was made. As soon as the monkeys emerge out of the anesthetic, if the section had been made at or below the fourth dorsal segment, the knee-jerks were present, and might be even more lively than before. Patulousness of the anus was rare. The limbs were in a state of flaccid palsy. In time, rigidity and contracture occurred. In the transection at the level of the second or third dorsal segment some difficulty was experienced temporarily in eliciting the jerks, and they seemed to be quickly exhausted. Transection at the level of the first dorsal and the eighth cervical segments resulted in the knee-jerks being temporarily obtained with difficulty, and they entirely failed after fifteen to thirty minutes.

Flaccid Paralysis.—Various theories had been advanced to explain flaccid paralysis with loss of the knee-jerks in man. The most commonly accepted explanation was the Bastian-Jackson theory, which ascribes the loss of the reflexes to the cutting off of the cerebral influences. In no case in which the cord had been completely severed had any return of the reflexes been observed. This explanation implied that the removal of the cerebellum should produce hypotonus and consequent loss or impairment of the knee-jerks, yet atonia had been declared by one observer to be a result of removal of the cerebellum. All observers agreed that even in those animals in which the knee-jerks are temporarily abolished their reappearance was a question of time, yet in monkeys even a temporary loss was not always observed. Instances of partial translesion with loss of the knee-jerks had been reported by several observers. Dr. Turner reported a case in which dislocation of the fifth cervical vertebra resulted in a complete flaccid paralysis and loss of the knee-jerks. The woman died 68 days later, and the postmortem examination showed that there was not a complete transection but that a thin ribbon or bridge, about 1 mm. thick, persisted. This band was shown by microscopical examination to consist of degenerated white fibers. In another case there was a fracture dislocation of the eighth dorsal vertebra, and the postmortem examination, sixteen months after the injury, showed a depression of the cord, the latter having been converted into a mere ribbon. In this case the reflexes persisted for four months. The plantar reflex was present in transections above the lumbar enlargement in man. From the experiments that he had made it was found that the crossed adductor and the superficial anal or perineal reflex, like the plantar, were not abolished by transection of the spinal cord. The condition of the knee-jerks in transection of the cord in monkeys was not constant. No such difference had been found in transections of the human spinal cord. Temporary abolition of the knee-jerks sometimes followed for a long period incomplete transections. In man, as experimentally in monkeys, though the knee-jerks might be abolished, the plantar and the superficial anal reflexes might be maintained. The speaker concluded that in spinal transection in man and in high transections in monkeys, actions dependent upon neuromuscular tone were temporarily or permanently abolished, but that true reflex movements were not impaired. The variation existing in the phenomena following spinal transection in monkeys would preclude the general application of Bastian's theory, for there was nothing on record to negative the view that the mechanism producing loss of knee-jerks in man, or their temporary abolition in man, was not to be found in the spinal cord itself.

Knee-Jerks in Man.—Dr. G. L. Walton of Boston said that the present tendency in favor of cerebral reflex centers was largely due to Bastian's observations, but the reflex conditions found in disease were too varied to be explained by the acceptance of centers either cerebral or spinal. The lower centers in the healthy human adult might remain, he thought, quiescent while the control of the higher centers might be interrupted by disease. An analogous condition was found in the vasomotor control. If the connection between the brain and the lumbar cord were primarily severed the knee-jerk would not return, but the plantar reflex might do so; if the destruction of the upper cord were gradual, the knee-jerk would not disappear; if the pyramidal transmission were reëstablished the knee-jerk would return. In early infancy extensive reflex movements of the foot and toes are present, and the knee-jerk is very active, although it is difficult or impossible to elicit it in prematurely-born infants. A tap should be made very near the patella with a small percussion hammer. If it were true that the plantar reflex could appear when the cord was permanently and completely separated from the brain, one would have to admit the existence of centers not only in the cord but in the brain. The reflex movements of the toes in infancy were of spinal origin, but were subsequently controlled by the higher centers. If the knee-jerk were temporarily lost it was because the cerebral reflex center was rendered ineffective by injury or functional separation from the lumbar region. The spinal centers would then become active. The point of divergence of the knee-jerk from the plantar reflex appeared first in complete severance of the cord. The other point of divergence was in the newly-born, in whom the knee-jerk was faint or wanting, and the cutaneous reflex active. In order to elicit the knee-jerk a certain degree of muscular tonicity was essential. The permanent loss of the knee-jerk in cases of severance of the cord might be due to the inability of the spinal centers for tonicity to perform their function. In the prematurely-born the spinal centers might not be able to act until the cerebral centers controlled the tonicity. It was probable that the spinal centers preside over the tendon reflexes of early life, but are gradually overshadowed by cerebral control.

Total Injury of Cord.—Dr. Philip C. Knapp of Boston said that comparatively few of the writers upon the reflexes had dwelt upon one point, *i. e.*, the extreme difficulty of proving anatomically the fact that the cord is totally destroyed. In one of his own cases there was clinical proof of conduction through the cord, and sections were made with very great care in order to determine the condition of the softened portion of the cord. It was found extremely difficult to make out the presence of normal nerve fibers in the softened part, although undoubtedly there must have been some. This might explain some of the published cases which appeared to contradict the rule. A case had come under his observation in which on removing the fractured laminæ the cord was found absolutely divided and the ends free. In this case a year after the accident there was flaccid paraplegia with loss of the knee-jerk and retained plantar reflex. This occurred before attention had been called to the Babinski reflex. Bastian's theory of the influence of the cerebellum upon the reflex seemed to be weakened by the fact that so rarely was there any change in the reflex in cases of cerebellar disease. The explanation of loss of the knee-jerk from complete section of the cord seemed to him far from satisfactory. It was known that if the entrance of the sensory fibers in the posterior horns and the columns in the third and fourth lumbar segments were destroyed, and the corresponding cells and anterior roots were destroyed going to the quadriceps, the reflex was lost, but even assuming that the nerve impulse must take a loop up into the cord to the level of the cervical enlargement, or possibly higher, it was difficult to understand this by the experiments brought forward by Dr. Turner to-night. If there were a reflex arc or a mechanism for the neuromuscular tonus, why should it be destroyed by a lesion high up while a lesion below, which must cut off all communication allows of the preservation of the reflex?

Dr. Charles K. Mills of Philadelphia said that he did not feel that he could contribute anything new to this interesting subject, but he would mention the fact that he had had quite a number of cases, with autopsies, which tended to confirm the views expressed by Dr. Turner. He had had a number of autopsies on cases of incomplete section of the spinal cord in various regions, in which the conditions were those already described this evening. He could recall several traumatic cases in which high lesions with complete loss of the knee-jerk had been present. His mind was far from being clear as yet with regard to the mechanism allowing of the retention of the knee-jerk under certain conditions and its loss under others. The cerebro-cerebellar theory had always seemed to him the most nearly satisfactory. He had had a comparatively large number of cases of cerebellar lesion, and these had shown interference with the knee-jerk, but the conditions had not been uniform. He had seen loss of the knee-jerk in cases afterward demonstrated to be examples of cerebellar disease. He had seen increased knee-jerk and even crossed knee-jerk in connection with cerebellar disease, and he was satisfied that disease of the cerebellum plays a part in interfering with the knee-jerk as with other reflex phenomena. The fact that lesions at the cervicodorsal junction when complete were apt to cause loss of the knee-jerk was of great interest. The existence of a ciliospinal center in a particular region of the cord might be suggestive with regard to the effect upon the knee-jerk and the lower reflexes in these particular cases.

Knee-Jerk not a True Reflex.—Dr. Joseph Fraenkel thought, with Dr. Mills, that the more this problem was studied the less seemed to be really known about it which would be of value at the bedside. The presence of a ciliospinal center high up in the cord might help in the explanation of these phenomena. A number of heterogeneous phenomena were considered in connection with the reflexes. The plantar reflex, which seemed to be the only permanent skin reflex, was representative of the skin reflexes just as much as the knee-jerk was characteristic of the tendon reflexes. This knee phenomenon was one of the expressions of the muscular qualities. A muscle possesses what is called irritability, and quite a complicated neural apparatus keeps up what is called muscular tonus. Whatever interfered with this influenced the tendon reflexes. In conjunction with the president of this Society he had had carried on for four years a clinical study of the reflexes, measuring at the same time the tonicity of the muscles. This study embraced about 600 cases, and included certain interesting pathological findings. They had become convinced that the knee-jerk was absolutely dependent upon the muscle tonus. If the muscle tonus were increased through pain in a joint there would be an increase of the knee-jerk. When the lesion of the spinal cord had been slowly progressive there would be nutritive shortening of the muscle, but the muscle tonus not being destroyed the reflex would still persist. The tendon reflexes should really be placed in the same category with the visceral reflexes. The considerable discrepancy between the findings at the bedside and in the laboratory had been explained by a recent publication of Strümpel, in which it was stated that the mechanism of the reflexes in the lower animals and in man was different.

Dr. Turner, in closing, said that until he had collected the results of his experiments in tabular form he had had no idea that the condition of the reflexes was so extremely variable. On referring to the literature he had found that this had been noted by several observers quite a number of years ago. He was in perfect accord with the position taken by Drs. Collins and Fraenkel. The condition of the knee-jerks was entirely due to the state of neuromuscular tonus, for, it was just this which was affected by transection. The superficial anal reflex was a pure one, and was found usually in monkeys and commonly in man. Unfortunately, the plantar reflex could not be elicited in monkeys. The effects on the reflexes observed in cases of disease of the cerebellum and in experimental lesion of the cerebellum were very different. He thought we should ascribe these variable phenomena not so much to the existence of a tumor in the cerebellum as to interference with intracranial pressure from the presence of a morbid growth under the tentorium cerebelli.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Stated Meeting, Held March 5, 1902.

The Vice-President, Robert T. Morris, M.D., in the Chair.

Dr. A. J. Lartigau read a paper on the Etiology of Gall-Stones, and Dr. Nathan E. Brill read one on the Differential Diagnosis of Gall-Bladder Disease. (See this week's Medical News.)

The Surgery of Gall-Stones.—Dr. Joseph A. Blake was the author of this paper. He said that earlier and more accurate diagnoses of gall-bladder disease should be made. An outline sketch was given of his last eleven cases of surgery of this region in order to show the nature of cases of this kind usually found in general hospitals. They included three cases of acute suppurative cholecystitis, three cases of chronic cholecystitis with stone in the common duct and fifty small calculi, one case of chronic cholecystitis and cholangeitis with stricture of the duodenum, and one case of rupture of the gall-bladder occurring one week prior to operation. The speaker said that mortality from gall-stone surgery must necessarily vary greatly depending upon the stage of the disease at the time of the operation and the complications present. It should not be high under favorable circumstances. Stones in the common duct were unfavorable cases, the mortality ranging from 6 to 20 per cent. with different operators. Biliary colic was generally due to cholecystitis and operation should be undertaken as soon as the diagnosis of cholecystitis was made. The status of gall-stone surgery to-day resembled that of appendicitis surgery ten years ago. There was now undue delay in operating on gall-stone cases. Cholecystectomy first came into favor in France, but was being more frequently performed now by the German and American surgeons. It was indicated as the operation of choice (1) in gangrene of the gall-bladder with suppurative inflammation endangering its vitality; (2) in neoplasms of the gall-bladder; (3) in cases of injury of the gall-bladder, and (4) in cases of permanent obstruction of the cystic duct. It should not be performed in cases in which drainage was indicated, in other words, when there was uncertainty as to the patency of the common duct, in cholangitis, when the duct is sutured after choledochotomy and the gall-bladder can be easily and safely drained. There was a class of cases, for the most part "interval" cases, in which cholecystectomy seemed to him the preferable operation. Pain was apt to recur in cholecystotomy; a biliary fistula was present, and the stasis of the bile in the gall-bladder was known to be a potent factor in the etiology of cholelithiasis. On the other hand, according to statistics, there was a greater mortality in cases of cholecystectomy. If the gall-bladder had no important function to perform he thought it should be removed in appropriate (For full report see this week's Medical News.)

Empyema of the Gall-Bladder.—Dr. Lucius W. Hotchkiss read this paper. He defined empyema of the gall-bladder as that form of infectious cholecystitis, acute or chronic, characterized by the presence of pus in the cavity and by various changes in the walls and the peritoneal covering of the organ. The different degrees of inflammation showed themselves most clearly in the condition of the mucosa of the gall-bladder. When the cystic duct was obstructed the gall-bladder became a cyst with serous or purulent contents. The inflammation generally extends to the walls of the gall-bladder causing marked thickening and edema of the serous and muscular layers, and leads to the formation of adhesions to the omentum and neighboring viscera. Local peritonitis frequently develops by the passage of infection through the intact gall-bladder. The degree of inflammation depends upon the virulence and character of the infection. In most cases of purulent cholecystitis the infection was derived from the intestine by way of the bile-duct, but in some instances the infection came directly from the blood-stream. The colon bacilli usually succumb quickly and the cholecystitis set up by this organism was not usually virulent unless reinforced by other bacilli. Up to a certain point attacks of choleocystitis were to be looked upon as conservative and sometimes were even curative by causing the expulsion of the stone. Kehr made the following clinical classification: (1) Acute cholecystitis in the relatively healthy gall-bladder; (2) acute cholecystitis in a contracted gall-bladder which has been frequently the seat of inflammation; (3) empyema of the gall-bladder; (4) stone in the cystic duct, and (5) pus in the bladder cavity and adhesions. In the first group there was generally a tender and palpable tumor in the region of the gall-bladder and fever was usually present. (For full report see this week's Medical News.)

Dr. William J. Chandler of South Orange said that he had met with distention of the gall-bladder with air in a patient who had been brought to hospital suffering from acute and advanced intestinal obstruction. It was necessary to make an artificial anus, and during this operation the condition of the gall-bladder was noted.

Dr. H. H. Seabrook said that there was very little in literature regarding the effect of cholemia on the eye. He recalled the fact that he had published in 1895 a paper on this subject, and added that he did not think any articles had appeared since that time. The changes in the retina were not very different from those observed in diabetes and in Bright's disease. The different forms of liver disease all presented these retinal changes, and they so closely resembled those found in Bright's disease that they were not of any diagnostic value.

Dr. C. E. Quimby said that a great many of these patients could not be prevailed upon to submit to operation as early as cases of appendicitis. Those affected with the latter disease were told that the operation entailed little or no risk, but the same assurance could not yet be given to patients suffering from gall-bladder disease. He had yet to see an explanation of why the "oil treatment" does any good in cholelithiasis. He had been taught that oil was a stimulant of the liver and had begun to use it as a physiological stimulant to the function of that organ. The use of oil certainly seemed to relieve these cases very decidedly. It was not the oil directly which did any good, hence it should not be given in heroic doses, but in ordinary ones. By such medication the flow of bile was augmented, and probably also a secretion was developed which contained a relatively small proportion of the solid elements. A bile of this character might possibly be capable of absorbing or dissolving cholesterin. He was absolutely sure that nothing was superior to this use of oil as a stimulant to the liver.

Dr. Robert Wylie referred to a recent case in which, owing to the very great enlargement of the liver, a very deep cavity was formed. He had found it very difficult to operate satisfactorily in this cavity, and he would like to know what Dr. Blake does in cases of this kind.

Dr. John F. Erdmann asked Dr. Brill with reference to infective jaundice due particularly to the bacillus pyocyaneus. In a recent case there had been evidence of choledochus obstruction, and at the operation no gall-bladder was found. Immediately after the operation an intense odor developed, such as occurs in connection with the bacillus pyocyaneus, and a few days later this bacillus was present. He would like to know if there had been an infective jaundice of this kind prior to operation, or if the infection had occurred at the time of the operation. He had not met with this bacillus for some months previously.

Dr. Robert T. Morris said that he would like to know why gall-stones occur more frequently in the aged if due to bacterial infection. Was this because of a lessened cell resistance? Most cases of colon bacillus infection of the appendix occurred in young people, which seemed to negative the view that it was a question of cell resistance, except on the theory that the appendix had largely undergone involution after middle life. The speaker referred to a recent case in which there was a large mass in the vicinity of the gall-bladder which fluctuated and moved with respiration. The patient had had attacks of gall-stone colic. At the operation a cancer of the head of the pancreas was found. It was filled with fluid and brown débris, thus explaining the fluctuation. It was retroperitoneal, but had a range of motion similar to the gall-bladder. It had undoubtedly caused attacks of biliary colic by pressure on the common duct. In determining with the stethoscope whether gall-stones were present, it was well to oil the skin, thus eliminating the crepitation produced by friction of the instrument against the skin. Infection of the gall-bladder by way of the portal system from the appendix no doubt occurred occasionally, but in many cases of this kind there was undoubtedly pressure on the superior mesenteric vein, and this would give rise to congestion of the cecum and appendix, thus explaining the simultaneous occurrence of these two conditions. He would like to know if Dr. Blake had noticed in one of his cases if the cholesterin of the stone had been attacked by the pancreatic juice, which sometimes takes place, owing to the proximity of the pancreatic duct.

Dr. A. J. Lartigau said that old people were more subject to disease of the liver, and such disorders would naturally predispose to infection. Moreover, as age advances the bile showed a tendency to become thicker and constipation was apt to be present, a condition which greatly favored the passage of micro-organisms into the portal circulation. His experience with pyocyaneus infections of the liver had been limited to the newborn, and most of the cases had originated from the gastro-intestinal tract. No special lesions of the liver had been noted in these cases. In a recent article on experimental physiology the statement was made that neither calomel nor olive oil actually stimulate the flow of bile. In the gall-bladders that he had studied he had been able to find the original micro-organism as long as two years after the inoculation.

Dr. Brill said that two years ago Dr. E. Libman and he had reported a case of systemic infection with the bacillus pyocyaneus. He thought such infections were rather common secondary to pyogenic infections.

Dr. Blake said that enlargement of the gall-bladder could occur in cases of obstruction of the common duct by stone if there had not been marked prior inflammation. He was unable to state what were the ultimate results of removal of the gall-bladder, except that no bad effect had been noted in the cases so far reported. In the class of cases spoken of by Dr. Wylie it was probably best to drain the liver through the gall-bladder. The stone presented by him had been situated nearly at the junction of the hepatic and cystic ducts, and at least one inch and a half from the duodenum. In that position it could hardly have been perceptibly influenced by the pancreatic juice.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. 80. NEW YORK, SATURDAY, MAY 17, 1902. NO. 20.

ORIGINAL ARTICLES.

ETIOLOGY OF PARESIS.[1]

BY ARTHUR W. HURD, A.M., M.D.,
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SUPERINTENDENT OF THE BUFFALO STATE HOSPITAL.

DEMENTIA paralytica, or paresis, has been recognized and studied for about one hundred years, but it is probable that only during the past fifty years has it received that sort of investigation which familiarity with the disease, accuracy of diagnosis and the accumulation of a sufficient number of cases for reliable statistical purposes would lead us to regard as of real scientific value.

A careful analysis of the histories of paretics during the last half-century has limited the assigned causes of the disease to a comparatively small number on which all observers are practically agreed, but with wide divergence as to the relative importance to be given to the several factors. These are syphilis (acquired), alcohol, mental stress and worry, heredity (including inherited syphilis), cerebral traumatism, sunstroke and lead-poisoning.

That a history of syphilis is present in a large number of patients is established, but it is doubtful whether we are yet in a position to subscribe to the dictum "No syphilis, no paresis." Krafft-Ebing has included another factor in his euphemistic and alliterative phrase "Civilization and syphilization." The statistics of different authors vary widely. Thus sixty-four observers found a history or marks of syphilis in paretics in percentages varying from 11 to 94 per cent., as collected by Peterson, Mott, Hirschl and others.

In the cases of paresis coming under my observation for the past ten years a percentage of 20 was found, but this is undoubtedly far too low, for there are many elements in hospital practice which tend to render it impossible to obtain reliable histories. For instance, many of our patients, because of their mental condition, are unable to give a history, whereas it might have been obtained earlier in the disease, before they had reached that state of mental aberration which led to their commitment to a hospital. Again, from the nature of the case, such a history is frequently not obtainable from friends, sometimes because they are honestly ignorant of the previous existence of a disease so usually concealed, while at other times, even when they are cognizant of it, from motives of pride or delicacy they persist in concealing the fact. Moreover, not a few of the patients come from walks of life many of whose members, through ignorance or inattention, do not recognize the infection or attach no importance to it. Or it may happen that they have dismissed it from their minds because they were told by some physician that they were cured. Finally, a large number of those that are too demented to give a history themselves have been depraved and wanderers so long that they have no friends who could enlighten us.

Taking all these factors into consideration, among them that in European countries (older than ours) the percentages seem higher, it is probable that at least 60 per cent. of paretics have suffered in former years from syphilis. When we consider that this is about ten times the percentage of syphilis in insanity generally considered, the coincidence is truly startling and we are forced to the conclusion that if not the direct cause lues is still a factor of such overwhelming preponderance as to occupy a most important relation to the disease. But, it has been urged, granting that from 60 to 70 per cent. of paretics have a specific history, there still remain 30 to 40 per cent. to be accounted for. There is undoubtedly a residue which must be assigned to other causes, but the foregoing statement has by no means the force that it might appear to have at first sight, inasmuch as it is found that, if one take one hundred patients with specific lesions on the skin—not paretics or mental cases—sometimes a history of lues is obtainable in a no larger percentage than in the same number of cases of paresis. Thus, one observer in London in a Lock hospital found that 80 per cent. or less of skin cases gave a specific history—where, as he knew, all were syphilitic—a percentage no higher than some have found in paresis. Hirschl, quoted by Krafft-Ebing, found (in the syphilitic ward of Prof. Lange in Vienna) that out of 63 cases of the late forms of syphilis a certain history of specific infection was obtainable in only 54 per cent. and a probable history in 9.5 per cent., whereas in 36.5 per cent., in spite of the existing evidence of lesions, no history was obtained. As compared with these figures another observer found among his paretics a luetic history undoubted in 56 per cent., probable in 25 per cent., and wanting in 19 per cent. respectively. In this series of investigations it will, therefore, be seen that the histories in the cases of skin syphilis fell short of those obtainable in paretics by 17.5 per cent. Furthermore, a series of experiments was attempted abroad which, it is needless to say, could not be carried out in this country, by which 9 undoubted cases of paresis with no obtainable history of syphilis were all inoculated with syphilitic virus and kept under careful observation. Not one of these developed syphilis. The most obvious inference from this is that, notwithstanding the absence of history, all had previously suffered from the disease and were therefore immune.

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[1] Read before the Medical Society of the State of New York, at Albany, on January 28, 1902.

Dr. Mott has pointed out among certain other considerations worthy of notice (1) that in Iceland, where syphilis is unknown, paresis is never encountered, and that the only case ever seen was in a syphilitic foreign sailor. Against this, however, it should be recorded that in Egypt and Japan, where syphilis is very common, paresis is very rare, but here again is to be noted the fact that there are very little mental stress and overexertion in fatalistic Egypt and in Japan. In these countries, civilization, with its rush and hurry, is of comparatively recent development—of about twenty-five years perhaps—introducing a new factor which we will consider later. (2) The clergy, priests and Quakers, who are very rarely affected with syphilis, show a very great freedom from paresis.

In this connection Krafft-Ebing quotes from the Deggendorf asylum report that out of 1,090 patients there were 17 priests, not one of whom had paresis, whereas out of 15 soldiers 8 were paretics, a percentage of 61.5. He also says that Bouchaud, collecting statistics from France, records that of 288 priests admitted only 9, or 3 per cent., were cases of paresis. Krafft-Ebing himself reports that among 1,000 male paretics he found only one Catholic priest, and he had contracted syphilis while a student. Again, he says that in rural districts, where syphilis and mental stress are both less prominent, paresis is correspondingly rare, and that both correspondingly increase on approach to the great cities. In the canton of Wallis in Switzerland, where syphilis is extremely rare, the percentage of paretics to the total number of male admissions to the asylum is only 1.1 per cent.

Mendel showed that in 1876 the percentage of paretics in an asylum of the agricultural provinces of Schleswig-Holstein and Hanover amounted to only 4.56 per cent., whereas in the urban institution of Brandenburg and in Berlin the percentages were 19.7 and 26 respectively.

In the rural portions of Ireland, where syphilis is very rare, paresis is almost unknown, and the same is recorded by Hougberg as regards Finland. In one institution in each country the paretics constituted only 7.03 per cent. of the total number of admissions and as regards sex the proportion showed 11 men to 1 woman. Krafft-Ebing also quotes Hougberg as reporting that of 107 paretics admitted between 1875 and 1892 there was not a single man from the country, whereas city laborers afforded numerous instances. Arnaud, in the *Annales méd. psychol.* for 1888, wrote that in the large cities of France paresis was four times more frequent than in the country districts. Blaschko's Danish researches prove that the same proportion exists between the city and country in syphilis as in paresis; *viz.*, about 4 to 1.

Again, while syphilis affects all classes of men it is rare among the upper classes of women. Paresis is likewise found in all classes of men but rarely among the higher classes of women; furthermore, the relative frequency of syphilis in men and women is about the same as of paresis; *viz.*, about 4 to 1.

In Denmark, where an enumeration of those afflicted with venereal diseases is attempted, Blaschko states that the proportion of venereal diseases in men and women is 4.1 to 1, while Idanoff, collecting statistics regarding paresis, finds the proportion between the sexes to be 3.49 to 1.

I have not as yet spoken of the increase of the disease in modern times, but it is a striking fact that, whereas a few years ago juvenile paresis was a great rarity, whole series of cases are now available for study. Alzheimer, in connection with his series of young paretics, obtained in 91 per cent. a history of a foregoing syphilis—in the great majority hereditary. Fournier found 100 per cent. of his 37 cases syphilitic, the disease being mostly hereditary, more rarely acquired. Krafft-Ebing obtained a history of syphilis in 11 of his cases, while in 22 cases under Mott's observation 13 were surely syphilitic, in 4 syphilis could not be excluded, while in the remaining 4 there was a history of the disease in the mother. Thus with specific signs on the body 60 per cent., or combined with a maternal history 80 per cent., had hereditary syphilis. Now while we find (European statistics) that the proportion of paresis in adults is about 4 men to 1 woman, Mott noticed the striking fact that in his juvenile cases the sexes are about equal. This can only mean that while men have about 4 chances to 1 of acquiring syphilis, compared with women, children have equal chances of inheriting it—a fact which would tend to sustain Mott's conviction that syphilis was the all predominant factor. Direct heredity seemed to play but little part, for while three of the children had paretic fathers, two of those fathers had a history of early syphilis and had transmitted well-marked signs of that disease to their children, and it may well be inferred that their early lues had more to do with the development of paresis in their children than had their own dementia paralytica.

As regards heredity, however, it must be said that some observers give it a much greater prominence, not perhaps in the way of a direct transmission of the disease, but of the transmission of a neuropathic diathesis from any of the recognized forms of mental or nervous disease by providing a soil in which paresis may readily flourish. Paresis *per se,* so far as my experience goes, may justly be regarded as one of the least transmissible of mental diseases as compared with the functional psychoses which seem preeminently so.

Näcke, as quoted by Berkley, supports the view that an invalid brain is prone to develop paresis from acquired syphilis. Thus, in an investigation of 100 paretics he found 50 per cent. with certainty having a cerebral defect, and with probability in a greater number. He holds that a defective brain with acquired syphilis is most frequently the foundation for the development of paresis, and that without the defective brain the specific infection would not have had this result. But it must be seen that the converse is also true—that without syphilis the defective brain would not have developed paresis, a position of view consonant with that of those who hold syphilis to be the prime cause, but giving greater prominence, it is true, to the inherited favorable conditions.

As to the transmission of the disease in any sense *per se,* it seems probable that the consensus of opinion that heredity plays only a minor part, in the present state of our knowledge, is a safe conclusion. In my experience the victims of paresis have not been feeble individuals, inheritors of disease, but are the active, the robust, the hale fellows, the free and generous livers.

Alcohol was formerly considered by French writers to be a very frequent cause of paresis. At present they have modified this view somewhat. Inebriety so often belongs to those who have syphilis; it is so often a feature in the lives of those undergoing great mental strain and anxiety; it is so often developed along with other irregularities by paretics in the first stage—an effect rather than cause—that it is difficult to assign to it a definite rôle. If no syphilitics were addicted to alcohol, and no alcoholics had syphilis, it would be an easy matter to determine which class furnished the paretics, but Venus and Bacchus have ever gone hand in hand and to differentiate is difficult. Dr. Mickle, fifteen years ago, regarded alcohol as a cause in as high a percentage as 23.5 in men—but at the present time I feel sure it would not be accorded so prominent a part. Alcoholism produces disastrous results in human brains, it is true, but these results seem to be *sui generis* and somewhat distinctive—a false rather than a true paresis. That it is a factor and an adjunct, however, to other causes is most probable; that by itself it is efficient in a moderate number of cases seems quite possible; that it is an active aid to syphilis is most probable; that it is a not infrequent accompaniment is undoubted. Many specific cases, however, give no history of alcohol.

Injuries to the head are assigned in a small number of cases. In some there seems to be possibly no other element and I am not prepared to deny that a severe cerebral injury may in itself be sufficient to cause the disease, although I am free to say that in the greater number of instances under my own personal observation in which cerebral injury is said to have been the sole cause by diligent inquiry I have been able to find in almost every case a history of preceding syphilis. The paresis has sometimes developed so soon after the injury as to make the relatives sure that it was the sole cause, but with a latent specific history in almost all these cases I am inclined to think that trauma is simply the ripening element, bringing to the surface that which was ready to appear at any time. I am rather of the opinion that many of these cases would never have developed paresis from the blow, had it not been for the antecedent syphilis. Of the etiological significance of poisoning by lead, tobacco, etc., it can only be said that such effects must be put down as problematical. There is a small percentage of cases in which one or other of these have been held responsible in the absence of any other apparent cause. It is fair to say that while the influence of such poisons might be sufficient, the number of cases depending upon them is too small to constitute them important factors.

I have so far omitted any extended consideration of mental overstrain, worry, anxiety, but these seem to supply a somewhat essential element. Paresis has been called "the disease of the nineteenth century." It seems hard to believe that, with syphilis existing for thousands of years, paresis should not have been recognized in earlier centuries, had it existed, by those good observers in medicine who always have been found, no matter what their times or enlightenment. If syphilis has been the sole cause, paresis must have prevailed earlier and, if so, it must have been recognized and mentioned in the literature. If we take the other alternative and conclude that it did not exist to any such extent as it does now, we must see what distinguishes the nineteenth century from those that have preceded it.

The great contrast, it seems to me, lies in what must be termed "civilization." An era of inventions, of electricity, of rapid means of communication, and of business competition, has called forth more and more mental exertion and struggle. This is a very trite remark and the point would not be referred to had it not a special bearing here. The increase of paresis with the progress of the century has been something remarkable, if we are to believe European authorities. Thus, in Deggendorf, a Bavarian institution, the number of paretics, which from 1869 to 1874 had amounted to 9.3 per cent. of men and 5.2 per cent. of women, showed in the years from 1885 to 1890 an increase to 23.2 per cent. of men and 9.3 per cent. of women. At Eichburg the number of paretics has been almost doubled. In some of the cities, particularly Berlin and Munich, still more remarkable percentages of increase have been noted. In this country, however, I have not been able to find such a rapid increase as Continental figures would indicate for Europe.

The great and increasing mental anxiety and overexertion of this century seem, then, to offer the principal contrast with those which have preceded, and it seems fair to assume that these, combined with syphilis, may supply the exciting cause in the largest proportion of cases. Egypt has but little mental stress, worry or anxiety; it is a country of fatalism; whatever is, is accepted; there are lacking the mental rush and overexertion of Western Europe and America, and it is precisely in Western Europe and in America that paresis is most largely found.

As regards the subject of tabes, Sachs, quoted by Peterson, says, "The very frequent development of tabes after dementia paralytica and of dementia paralytica after tabes proves the close relationship between the two diseases; and, since tabes is beyond doubt a form of syphilitic disease, there is sufficient ground for thinking that dementia paralytica has the same etiological imprint." To this objection is made that if the relationship be so close there should be a closer approximation as regards the percentages of specific histories obtainable in the two diseases. Thus, in tabes we find a history of syphilitic infection in 80 to 90 per cent. of the cases, whereas in paresis it is somewhat less frequent—in 60 per cent. on an average, for we have found the percentages varying from 11 to 90 per cent., according to the experience of the observers, the nationality of the patients, their social condition, and locality of residence.

This lack of approximation may be partly accounted for by the fact that the mental condition of tabetics often enables them to give a clear history of syphilis, which it is impossible to obtain in the mentally-obscured paretic. Furthermore, while the two diseases without doubt often develop one into the other, after all, according to my experience, the incidence of the two is not so frequent or so striking as to make the problem an insistent one for solution. When we consider that the brain is affected in one case and in the other the cord—different parts of one system it is true, but different nevertheless—and that other considerations may affect the possibility of accurate histories in paretics, we may feel that the cases are not exactly parallel and that the arguments on either side are somewhat inconclusive.

Again, it is urged that if paresis were the result of syphilis we should obtain the same beneficial effects from antispecific remedies in paresis that we get in ordinary brain syphilis. This apparently is a very strong argument against the theory of a specific origin, and its consideration would lead us into the domain of pathology, a topic reserved for another paper and for a pathologist. It may be said, however, if Mott's contention be true, that in paresis it is the neuron that is attacked, whereas in ordinary brain syphilis it is the meninges, especially of the base, and the arteries, with the formation of gummata, etc., we may have here the true explanation, for the neurons, as he demonstrates, are incapable of regeneration—according to the dictum of Virchow, who says: "A cell nourishes itself and is not nourished"—while the structures concerned in ordinary brain syphilis can be affected by treatment. In other words, according to Mott, it is simply a question of what structure is involved in the disease process and not a question of the identity of the cause that determines the effect of treatment. This brings to mind the query of Allan McLane Hamilton who asks, "Are there any varying toxins in syphilis, some more active, which attack the skin and mucous membrane, and the like, and show immediate effects, and another toxin which has as yet eluded us, which lies dormant for many years until it finally shows itself in disease either of the brain or of the spinal cord?"

But whether syphilis acts directly as a cause of cerebral changes, producing what we call paresis, or indirectly by lowering vitality, preparing the way or predisposing, the result is practically the same, and we must admit that in one way or the other it is the most potent cause of paresis, but that there are other causes which must be recognized as acting as adjuncts.

It seems justifiable in the present state of our knowledge to conclude as follows:

(1) Syphilis is the most common factor in the production of paresis.

(2) It may cause it directly—an exciting cause.

(3) It may cause it indirectly by bringing about such a devitalization of the system generally as to render other influences operative—a predisposing cause.

(4) It is not usually the sole cause, but there is associated with it the deleterious effect of mental stress and overexcitement, dissipation and alcoholism, and heredity.

(5) In a certain relatively small number of cases mental stress, worry or overwork may be the sole ascertainable cause.

(6) Traumatism may also be the cause in a still smaller proportion of cases, but in many of them it acts as a developing or ripening agent of an incipient paresis in a syphilitic subject.

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THE COMPARATIVE FREQUENCY OF GENERAL PARESIS.[1]

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As part of the symposium on paresis I have been requested to present some statistics bearing upon the occurrence of this disease generally and its frequency in the professions. Accordingly I have gathered the following data from such sources as I have found accessible.

Examination of the literature of paresis discloses that it has been recognized for a period of about eighty years, although claims are made that some cases were reported before the close of the eighteenth century. As early as 1815, Esquirol appears to have noted the fatal ending of paralysis and failure of speech in certain cases of insanity, but his writings do not indicate that he ever had a clear idea of general paresis as a distinct form of disease. One of his students, however, Georget, described it in 1820 under the name of chronic muscular paralysis. Delaye in 1824 called it "incomplete general paralysis," a name which has since been retained as one of those commonly in use. Calmeil published a complete description of the physical symptoms and anatomical lesions in general paresis in 1826, but all of these writers and many others about this period appear to have regarded the malady as a special form of paralysis superimposed upon insanity—a complication of an already-existing mental disorder rather than a distinct form. In 1839, Dr. W. A. F. Browne, Commissioner in Lunacy for Scotland, observed cases in that country, but it was not until 1843 that general paresis was recognized in America. In that year Dr. Luther Bell of the McLean Asylum, now presided over by Dr. Edward Cowles, detected this disease in a number of patients, all of whom died within a comparatively short time.

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[1] Read before the State Medical Society, at Albany, N. Y., January 28, 1902.

Dr. Bell, in his annual report for 1843, stated that prior to 1840 he had never met with an instance of paresis in this country, although he had seen many cases abroad and had made diligent search for them in his own asylum and elsewhere on this side of the Atlantic. He says: "I have regarded it as a somewhat curious fact that it is only within the last few years that this disease has been admitted into this institution. As late as my visit to Europe in 1840, it was unknown within our walls, nor, after seeing it there, can I recall any case in our register which would at all meet its characteristics, rendering it certain that it was not overlooked."

Four years later Dr. Pliny Earle reported several cases at the Bloomingdale Asylum in New York City, and about the same time Dr. Amariah Brigham, of the New York State Lunatic Asylum at Utica, is said to have had similar cases. I find, however, in Dr. Brigham's annual asylum reports only meager references to general paralysis. In the years 1844 to 1847 he mentions, among the causes of death, paralysis in one or two cases each year. In 1848, the last year of his life, his report shows that five patients died of general paralysis, but in none of his reports does he publish a table showing the forms of insanity in the cases admitted, nor does he discuss the symptoms of the cases mentioned as terminating in death by general paralysis.

The first table of this kind published in the history of the institution at Utica, showing the forms of insanity admitted, is found in the report of Dr. N. D. Benedict for the twelve months ending November 30, 1850, the year following that in which he succeeded Dr. Brigham as superintendent of that institution. His report shows that two cases of general paralysis were admitted during that year and that there had been one remaining in the hospital at the close of the previous year. A few years later, Dr. Ranney of the City Asylum on Blackwell's Island reported several cases as occurring in that institution. In 1866 Dr. John P. Gray, who had succeeded Dr. Benedict at Utica, read a paper before this society in which he gave an exhaustive review of several cases selected from a total of 119 that he had had under his personal observation.

Beginning with the year 1849, when the admission of the first case was recorded at the Utica Asylum, the reports of that institution show only a gradual increase in the number of general paretics admitted during the next ten years. The average number of patients of all kinds received annually into the institution during the period mentioned was 329, while the average number of paretics was 5 or 1.5 per cent. The next decade, with an average annual admission of 351 patients, shows an increase in the number of cases received at the asylum, but a much more rapid increase in the number of general paretics that were annually brought there. The average annual admission of this class for the ten years was 15, or 4.3 per cent., but for the latter half of the decade the percentage was slightly above 5 per cent. This decade covered the Civil War and the four years immediately following. The query naturally arises as to the influence of that period of storm and stress as a causative factor in the production of insanity generally and especially paresis. From 1870 to 1880 the average number of patients received annually at Utica was 434, whereas the average number of paretics received was 21 or about 5 per cent. During the next ten years, from 1880 to 1890, the average number of patients annually admitted was 418 and the average number of paretics was 29, or 7 per cent. For the last decade of the century, that is from 1890 to 1900, the average number of patients received annually was 327 and the average number of paretics was 13, or 4 per cent.

During the fifty years comprising the last half of the nineteenth century there were received at Utica 18,843 insane persons of whom 865 were cases of general paresis, the average percentage being, therefore, 4.5 per cent. The proportion of women to men was 1 to 7.5.

The Hudson River State Hospital was opened in 1871. During the first decade of its existence there were received 1,671 patients, of whom 130 were paretics—7.75 per cent. During the second decade 3,208 patients were received, of whom 144 or 4.4 per cent. were cases of paresis. During the third decade the total number received was 5,735, of whom 361, or 6.3 per cent., were paretics. The total number of patients received in 30 years was 10,434, while the total number of cases of paresis was 672 or 6.4 per cent. Of these patients 75 were women and 597 were men—a proportion of 1 to 8.

From September 30, 1881, to October 1, 1901, there were admitted into the Buffalo State Hospital 8,243 patients. Of this number 391, or 4.74 per cent. were paretics, of whom 65 were women and 332 were men—a proportion of 1 to 5.

The total number of patients received into the St. Lawrence State Hospital from December 9, 1890, when it was opened, to September 30, 1901, was 4,286. The number of cases of general paresis received during the same period was 208, or 4.8 per cent.

There were admitted to the Rochester State Hospital from the date of opening in July, 1891, to September 30, 1901, 1,183 patients, of whom 105, or 5.6 per cent., were general paretics.

At the Middletown State Homeopathic Hospital the number of patients admitted from the date of opening in 1874 to September 30, 1901, was 5,892; of these 292, or 4.9 per cent., were general paretics.

At the Binghamton State Hospital there were admitted on original commitments between October 1, 1890, and September 30, 1901, 2,226 patients; of these 111, or 4.9 per cent., were cases of general paresis—19 being women and 92 men, a proportion of about 1 to 5.

From Dr. A. E. Macdonald, Superintendent of the Manhattan State Hospital, East, I learn that during the last thirty years about 18,000 insane men have been received into that institution under both county and State care. Of this number 16 per cent. have been cases of general paresis and the annual admission rate has been nearly constant for several years past.

Although I have not the exact figures showing the number of women admitted to the female department of the Manhattan State Hospital, the reports of the State Commission in Lunacy indicate that it has not differed materially from the number of men received. If, therefore, due allowance be made for the number of paretics that were received among the female cases, we should probably find that the percentage of paretics in the total number of cases of insanity received was somewhat above 9 per cent.

The total number of patients received into the Long Island State Hospital at Flatbush from 1896 to September 30, 1901, was 2,141. The number of cases of general paresis admitted during the same period was 250, or 11.5 per cent. Of these paretics 27 were women and 223 were men—a proportion of 1 to 8.

At the Bloomingdale Asylum, White Plains, N. Y.—practically a private institution—there were received during the ten years ending September 30, 1901, 1,230 patients. Of this number 180 men and 25 women, or 16.6 per cent., were suffering from general paresis, the proportion being 1 woman to 7 men.

During the last thirteen years—the period covered by the reports of the State Commission in Lunacy—it appears that there have been received in all the State hospitals of New York a grand total of 49,787 patients. Of these 3,307—a percentage of 6.6—have been cases of general paresis. This, however, is somewhat lower than the actual percentage of cases received, for the reason that, under the operation of the State Care Law, the State Commission in Lunacy has from time to time transferred large numbers of patients from one hospital to another and these transfers have materially swelled the apparent number of admissions as shown by the reports of the Commission, whereas the number of cases of paretics has not been similarly affected by these transfers.

The following table shows the total annual admissions, the number of paretics received and their percentage in the State hospital system of New York during the last thirteen years:

Year.	Admissions.	Paretics.	Percentage.
1889	1,813	98	5.4
1890	1,942	66	3.4
1891	2,868	80	2.7
1892	2,627	114	4.3
1893	2,704	132	4.8
1894	4,003	152	3.7
1895	3,003	161	5.3
1896	5,615	399	7.1
1897	4,649	423	9.0
1898	5,542	448	8.0
1899	5,243	414	7.8
1900	4,862	396	8.0
1901	4,916	424	8.6
	49,787	3,307	6.6

In the *Journal of Mental Science* for July, 1900, Dr. Arthur E. Patterson, senior assistant medical officer of the City of London Asylum at Dartford, analyzes 1,000 admissions, of whom 620 were men. Of the latter 76, or 12 per cent., were general paretics, whereas of the 380 women 8, or not quite 3 per cent., were cases of general paralysis. The proportion of men to women suffering from this disease was 6 to 1. Of the men 43 were married, 30 were single, 1 was a widower, and in 2 instances the condition as to marriage was unknown. Of the women 4 were married, 3 were widowed and 1 was single. It would thus appear that the disease is met with more frequently in the married than in the single.

Only 2 of the men were under thirty years of age, 34 were between thirty and forty, and 30 were between forty and fifty, whilst 10 were between fifty and sixty. These figures show that no less than 64 out of the total 76 men were between the ages of thirty and fifty, whereas all of the women were between thirty and forty.

A recent report of the medical superintendent of the Cane Hill Asylum in the county of London shows that of 402 patients admitted during twelve months 42 suffered from paresis, 38 of whom were men and 4 were women. Paretics, therefore, formed 10.4 per cent. of the admissions, the proportion of women to men being 1 to 9.

At the Claybury Asylum in the same county for a similar period there were admitted 820 cases of insanity. Of these 87 were paretics, 71 being men and 16 women. Paretics, therefore, formed 10 per cent. of the total admissions, and the proportion of women to men was 1 to 4.5. Of the men received 18 per cent. were cases of paresis.

At Hanwell Asylum the year's admissions numbered 534. Of the men 19 per cent. were paretics and of the women 5 per cent.

Occupation.—Of 1,300 cases of paresis recorded at the Manhattan State Hospital, East, only 8 were actors while 7 were lawyers and 5 were physicians—the clergy not being represented. It would appear that while no particular profession, trade, business or occupation especially predisposes the individual to an attack of general paresis, every walk of life is represented. Among the cases under consideration were 109 ordinary laborers, 59 clerks, 45 tailors, 37 drivers, 35 bartenders, 32 painters, 32 cigarmakers, 31 carpenters, 29 salesmen, 28 shoemakers, 26 waitresses, 23 merchants, 20 machinists, 16 printers, 16 butchers, 17 bakers, 16 barbers, 16 engineers, 16 peddlers, 14 cooks, 13 musicians, 13 porters, 12 blacksmiths, and so on through more than 200 different occupations.

Among 672 paretics at the Hudson River State Hospital were 10 engineers, 6 lawyers, 4 military or naval officers, 3 physicians, 2 authors.

Out of 208 at the St. Lawrence State Hospital there were 2 physicians, 35 laborers, 14 farmers, 6 commercial travelers, 11 railway employees, and 20 housewives.

Among 120 cases at the Rochester State Hospital were 3 lawyers, 6 shoemakers, 5 merchants, 5 farmers, 8 laborers, and 6 painters.

In 239 cases at the Buffalo State Hospital there were 4 physicians, 3 lawyers, 2 clergymen, 1 editor, 2 actors, 2 artists, and 2 musicians.

At Flatbush among 250 cases there were 6 druggists, 3 musicians, 1 physician, 1 veterinary surgeon, 1 artist, and 1 dentist.

At the Bloomingdale Asylum, among 180 men admitted, there were 9 lawyers, 5 physicians, 4 actors, 4 theatrical managers, 2 musicians, 1 teacher, 28 merchants, 27 clerks, 8 manufacturers, 8 brokers, 6 saloonkeepers, 4 police officers, and 2 civil engineers.

In all of the institutions except Bloomingdale the laboring classes are largely represented.

Duration.—To Dr. Louis C. Pettit, second assistant physician at the Manhattan State Hospital, East, I am indebted for valuable data regarding the duration of the disease, collected by him from the wards and records of that institution. Thirteen hundred patients observed lived after admission an average period of eleven months each, the disease showing an average duration prior to admission of fifteen and three-fourths months. The total average duration of these cases was, therefore, a little more than two years. Thirty-two nations and over 250 occupations were represented in this death-roll from general paresis. Of these paretics there were 484 of American birth, 335 Germans, 244 Irish, 71 English, 31 French, while the remaining 135 were about evenly distributed through 20 other nationalities, among them being two Chinamen. These figures show a remarkable preponderance of native Americans suffering from general paresis in an institution where more than two-thirds of the inmates were of foreign birth and over 80 per cent. of foreign parentage.

Dr. Pettit gives an interesting table which tends to show that general paresis rarely occurs before the twentieth year or after the age of sixty. In the 1,300 cases tabulated death occurred as follows:

Age at death.	Cases.
20 to 25 years	4
25 to 30 “	72
30 to 35 “	173
35 to 40 “	250
40 to 45 “	272
45 to 50 “	212
50 to 55 “	152
55 to 60 “	89
60 to 65 “	53
65 to 70 “	20
70 to 75 “	2
75 to 80 “	1
	1,300

Dr. Asher of the Dalldorf Asylum, Berlin, reports in the *Allgemeine Zeitschrift für Psychiatrie,* Vol. XLVI., No. 1, that of 643 cases of general paresis in men treated in that institution two-thirds were between the ages of thirty-five and fifty. The average duration of life after admission was fourteen and one-half months and only 16.8 per cent. lived two years after admission.

In 305 cases in which the date at which the symptoms first attracted attention was ascertained, the average duration was twenty-six months. The progress of the disease seemed to be more rapid in the younger subjects. Between the ages of twenty and thirty-five the average duration of institution life was thirteen and one-half months; between thirty-five and fifty, fourteen and one-half months, and between fifty and seventy, fifteen months.

Dr. Asher found a definite hereditary predisposition in 33 per cent. and syphilitic infection in 35 per cent. Alcoholic intemperance was alleged in 37.6 per cent. and injury to the head in 9 per cent. of the cases.

The *American Journal of Insanity* for January, 1896, contains a report showing that of 200 male cases of paresis in Krafft-Ebing's clinic in Vienna 56 per cent. were certainly syphilitic, 25 per cent. probably so, while in 19 per cent. the data were insufficient to warrant a conclusion of probable syphilis.

In all the records of paresis studied in preparing this paper I have found but a single instance of alleged recovery from the disease.

From this brief survey of the statistics of general paresis it would appear that it forms about 8.75 per cent. of all cases of insanity; that it occurs most frequently between the ages of thirty and fifty; that it is gradually increasing in frequency at the present time; that men are about seven times as liable to the disease as women; that it is invariably fatal in its termination and usually so in less than two and a half years. Furthermore, that it is nearly twice as frequent in large cities as in the country and that heredity, syphilitic infection, and alcoholic indulgence are important factors in its production. That neither the members of the learned profession, teachers, students, musicians, nor actors, appear to be especially susceptible, nor does intellectual work or any other special kind of occupation seem to predispose the individual to paresis, but that general cerebral strain with more or less hereditary influence is found to have existed in the majority of cases. Overwork, sexual excesses, alcoholism, irregular habits of sleeping and eating and such accidents as sunstroke and cerebral traumatism appear to be the great factors in the production of this disease.

Home for Aged Jews.—It is said that Mrs. Morris Rosenbaum has donated $25,000 to the Home for Aged Jews. This money will be spent in erecting a fireproof hospital, 40 by 60, which will be fitted out by the daughter of Mrs. Rosenbaum.

THE EARLY DIAGNOSIS OF PARESIS.[1]

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It is with much hesitation that I attempt to discuss so difficult a subject as the early recognition of paresis, for here we are confronted with borderland conditions and overlapping states. I know of no subject which is so important and no subject concerning which error is more frequently made both on account of the gradual invasion and also because of the generalized character of the symptoms. The recognition of the disease in its early stage is especially difficult because, in the average case, general disturbances for a long time precede the appearance of special symptoms indicative of organic change. In cases in which a satisfactory and detailed history of the very early period can be obtained, we usually receive an account of general ill-health, an ill-health evidenced by complaints on the part of the patient, as well as by the observations of his friends. As a rule, we find that the patient has not been well for some time—usually months. If, during this preliminary period of ill-health, the patient visit his physician, the case is not infrequently mistaken for one of neurasthenia, and yet, when the symptoms presented are closely analyzed, it is found that they resemble those of neurasthenia only superficially. It is true we have quite commonly the symptom of ready fatigue and in addition inability to maintain the attention for any length of time upon affairs of business or other every-day matters. Notwithstanding, the typical fatigue syndrome of neurasthenia is wanting, as an analysis of the early symptoms will show. The friends of the patient often maintain that his appearance and manner have changed, that he no longer attends to his business as carefully or no longer does his work as well as formerly. He may look somewhat tired or perhaps a little sleepy. At times he is pale and at times, again, his face may be unusually flushed; it often lacks its former vigor of expression. His attitude, his movements, his walk may suggest general loss of tone. Sometimes he is troubled with various vague distressing sensations about the head, such as fulness, pressure or constriction, or again he may complain of ringing in the ears, sparks before the eyes, and muscæ volitantes. Attacks of giddiness and vertigo may also occur and some patients suffer from a dazed or stunned feeling in the head. Occasionally there are rheumatoid pains referred to the arms, legs, and to the back of the neck or trunk. More often, when pain is present, it assumes a distinctly tabetic character, is lightning-like and darting, or now and then may suggest neuralgia. Pain in the head of great severity and simulating migraine is not very infrequent. At times the headache is referred to the supraorbital and adjacent regions and especially to the eyeball of one side, the attack then suggesting ophthalmic migraine.

In the neurasthenic patient, the symptoms are almost exclusively subjective. He begins by describing to us how he feels, and complains actively of various symptoms. He tells us that he is nervous, is easily excited and upset, that he gets very tired at his work, that his head aches, his heart palpitates, that he has indigestion, that his bowels are constipated. He complains of various diffuse aches or pains which suggest the sensations of simple or exaggerated fatigue. He suffers from occipital headache, from backache, from aching in the limbs and perhaps tenderness over the spine. He presents also quite characteristic signs of atony of digestion or of gastric catarrh and constipation; and very commonly with a history of palpitation of the heart is associated that of coldness and dampness of the extremities.

While there are some superficial resemblances between the symptoms which he details and those found in the early beginning of paresis, we cannot but note certain striking differences. First, the patient in the early beginning of paresis, if he appear before the physician at all, is generally brought by friends or relatives. Rarely does he come of his own initiative. Secondly, it is the friends or relatives who detail the symptoms. They give an account of changes which they have noted in the patient and of which he himself may not be cognizant or to which he has paid no attention. The signs of ill-health are first observed by those about him, not by the patient himself, who, as a rule, does not actively complain, unless there be present tabetic or neuralgic pains or attacks of the migraine-like headache. His conduct is in marked contrast to that of the neurasthenic patient, who not only seeks the physician's advice himself, but also has at his tongue's end a long list of complaints with which we are all very familiar. Further, the physical appearance of the neurasthenic is rarely changed, or, in any case, is not altered in the same manner as is the appearance of the paretic. He may be pale, perhaps, or a trifle thin, but certainly he is not somnolent and his features lack none of their accustomed force. Often the anxiety with regard to his condition causes an accentuation of the facial lines; certainly never an effacement of folds and wrinkles; his face may have an anxious or a worried look, but there is no change of quality in its expression. It is still the same face to friends or relatives. It has not become altered so as to suggest that the patient is a changed man. The friends are never the ones to discover first that the patient is ill, and, indeed, frequently listen to his complaints with impatience and incredulity. No one has noted marked change either in his appearance or in his manner. Least of all does anyone tell us that the patient attends to his business less carefully or less well than formerly. Further, when we analyze the symptoms which are detailed by the neurasthenic, we find that they are those of chronic fatigue, of occipital headache, of backache, of limbache. There is no account of darting or lightning-like pains. The headache is quite characteristic and there is no occurrence of one or two attacks of terrible neuralgia or migraine-like headache so often met with in the early paretic. Again, the motor phenomena of neurasthenia are those of simple weakness and ready fatigue. There is never a loss of precision in movement, never a loss of accuracy of coordination. It is not observed, for instance, in the neurasthenic mechanic that his work is done less accurately or in the neurasthenic clerk or bookkeeper that his hand-writing is changed. In the mechanic in the early stage of paresis, inaccuracy and change in the quality of his work are among the first symptoms observed. Further, the deterioration is observed not by himself, but by those about him.

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[1] Read before the Medical Society of the State of New York, at Albany, January 28, 1902.

The sleep disturbances of neurasthenia are radically different from those of paresis. The neurasthenic on going to bed as a rule falls asleep readily, but is disturbed at intervals during the night or awakens early in the morning and leaves his bed in an exhausted and depressed condition. After he has taken food, and as the day progresses, his condition steadily improves until the evening, when he is in a relatively good condition. By this time his fatigue symptoms have largely disappeared and many a neurasthenic patient in the evening is in such good condition that he himself will declare that he is no longer ill. In paresis, in the early stage, the opposite condition, as a rule, obtains. Though the patient may suffer from insomnia, dreams or disturbed sleep, he is usually at his best in the morning, but as the day progresses becomes more and more drowsy until toward evening somnolence may be very marked. Vague and suggestive symptoms, absent in the morning, may be present in the evening and be so pronounced as to attract the attention of those about him. The speech which may have been clear in the morning, may be distinctly thick and blurred in the evening. The face, which has had a relatively normal expression in the morning, may be dull and heavy in the evening; the gait and gestures may be cumbrous and awkward. Slight disarrangement of the clothing, indifference to the niceties and proprieties, unwonted profanity, coarseness and irritability may also be noted at this time.

The neurasthenic is not only at his best in the evening, but qualitative mental changes are at no time present; in the paretic, on the other hand, qualitative mental changes, although possibly in only very slight degree, are noticeable almost at the outset. The mental phenomena of the neurasthenic are essentially quantitative. We have first a marked and characteristic symptom in the diminution of the capacity for intellectual effort. The attempt to do mental work sooner or later brings on symptoms of exhaustion. The task may be properly begun, but soon the patient experiences difficulty in keeping the attention upon it and if the attempt be persisted in painful sensations about the head arise, such as a feeling of constriction, headache and giddiness. This difficulty of concentrating the attention may lead to an attitude of distraction and inattention. Mental fatigue is also evidenced by a number of other symptoms. Ideas do not present themselves so readily or in the same rapid succession as in health. There is a distinct decrease in the spontaneity of thought and this the patient himself well recognizes, often saying, "I cannot think." There may also be more or less marked irritability. Trifling occurrences sometimes provoke to anger, just as other inadequate causes, *e. g.*, a play at the theatre or a newspaper account of a murder, may excite the patient to laughter or to tears. Together with these symptoms we find that our patient is also introspective. He suffers from a distinct nosophobia. His indigestion suggests to him that he has a serious organic disease of the stomach; his palpitation leads him to fear that he has serious disease of the heart. The patient so afflicted not infrequently comes to the physician with the statement that he is afraid he is "going out of his mind," that "he is losing his memory." Indeed, "loss of memory" is one of the most common phrases used by the neurasthenic. How incorrect this expression is, every one of my auditors can testify, for the neurasthenic patient will give a most circumstantial history of his case, not omitting even unimportant details, and will in other ways render it clear that there is no actual impairment of memory. Neither is there at any time any inability to understand properly or to reason correctly about ordinary matters. We are at once convinced that there is no qualitative mental change whatever.

The mental condition of the paretic presents in this respect a more or less marked contrast. In the early period of his disease he too becomes readily fatigued; he cannot do his work without an unusual effort and it soon becomes distasteful to him. There is added, however, to this symptom of ready fatigue, a distinct feebleness both in the ability to apprehend and in the ability to remember. Unusual forgetfulness is especially observed as regards the smaller details of life. Distinct and undoubted impairment of memory is one of the first symptoms. The patient's work becomes changed in quality not only because of slight impairment of coordination of movement, but also because the patient forgets how to do it. In addition there are sooner or later those slight but constantly recurring changes in habit and lapses in conduct which are so characteristic in paresis. These are all qualitative in character and are indicative of a fundamental alteration in the mental make-up of the individual; the forgetfulness, manifested in neglect of the attire, in neglect of business, in infractions of a long accustomed daily routine, unseemly behavior at the table when eating, gradual obtusion to the proprieties of conduct, all have but one meaning. This dulling of the sensibilities is further made evident by the slight impression which important events, such as a business transaction of consequence, the illness of a near relative or the death of a friend, make upon the patient. A tendency to repetition in conversation, the introduction of irrelevant matter and an occasional obscene or profane expression on the part of a man previously precise and careful in his language, are but shadows of events to come. In the neurasthenic, it is unnecessary to point out, such changes as these never occur; the sense of propriety, the sense of duty, the sense of the esthetic, never become blunted. There is none of that loss of interest in the family, none of that lack of affection for relatives and friends, none of the gross indifference of the paretic. If the neurasthenic cannot follow his daily vocation because of his ill-health, he is worried and distressed. He manifests no indifference to business, and least of all are there found errors or confusion in his acounts. There is none of the gradual rise to the surface of the coarser animal qualities, none of the excessive eating and drinking, none of the beginning indulgence in alcohol or unwonted sexual gratification, no diminution in the nicety and refinement of speech, none of the coarseness and vulgarity seen in the early paretic. No history is elicited of undue familiarity or improper jests with ladies, female servants or others.

In the paretic the mental changes are far more than those of mere weakness, while in the neurasthenic they are simply and solely those of fatigue. Even when distinct psychopathic factors make their appearance in neurasthenia, they never in the least resemble those of paresis. We need only mention the special fears, the various phobias and obsessions to prove the truth of this assertion.

To my mind the difficulty of the distinction between neurasthenia and the very early stage of paresis is largely due to the loose conception of neurasthenia that prevails. The conception of neurasthenia should be strictly limited to that of the fatigue neurosis; the term neurasthenia should not be applied to any other condition, and to say that a paretic passes through a period of neurasthenia in the early stage of his paresis, is to make a gross misuse of terms. We must separate neurasthenia from certain other morbid states which, while they superficially resemble it, differ from it radically. Among these are especially the nervous conditions which belong to the larvated, undeveloped or prodromal periods of the insanities. The various symptoms of nervous weakness and other nervous manifestations by which such affections are attended bear no relation whatever to those of neurasthenia. They only superficially resemble the latter and they should be characterized not as neurasthenic, but as neurasthenoid. The term neurasthenic should be applied only to the symptoms of neurasthenia and not to those of other and widely differing affections, and what is true here of the relation of neurasthenia to paresis is also true of neurasthenia in relation to melancholia and other mental affections. It is just as incorrect to say that a patient has passed through a neurasthenia, which has deepened into a melancholia, as it is to say that a patient has passed through a neurasthenia which has deepened into a paresis. The truth is that such a patient has merely passed through a neurasthenoid stage; he has never been truly neurasthenic.

Paresis in the early portion of its initial period is every now and then confused not only with neurasthenia, but also with hypochondria and melancholia. From hypochondria it is readily distinguished by the same factors which differentiate it from neurasthenia. In simple hypochondria, notwithstanding the nosophobia, there are none of those manifold evidences of qualitative mental changes which are so evident in paresis. There is no mental obtusion and the patient is in close relation with his environment and the facts of his daily life. The fact that many paretic patients are in their early history very hypochondriacal, emphasizes the importance of this differentiation.

Because the initial period of paresis is frequently accompanied not only by neurasthenoid or hypochondriacal symptoms, but also by marked mental depression, the error is not infrequently made of confounding early paresis with true melancholia. Melancholia we now know to be a symptom-complex of a more extensive affection, namely, melancholia-mania. The latter is a disease largely hereditary, characterized by periods of emotional depression or of exaltation which extend over months of time and which usually recur in successive waves during the lifetime of the individual. During the melancholic phase of such a wave, the picture presented is one of intense psychic depression associated with ideas of sinfulness, spiritual ruin, or moral unworthiness. There is the great agony of the lost soul, the hopelessness of a wasted past or the belief in some crime never to be atoned. There is not, however, especially in that early period of which we are now speaking, that blunting of the faculties, that change of the relationship to the environment which is shown by deterioration of conduct, of dress and of speech. By a searching inquiry as to factors pointing to such degeneration, the differentiation is to be made, as well as, it need hardly be added, by the presence or absence of a history of previous attacks or of a family history of melancholia-mania or allied neuropathies.

In the above remarks I have purposely avoided dealing with the physical signs of paresis for the reason that as soon as these make their appearance both neurasthenia and melancholia are set aside. I should here, however, mention the importance of an examination of the visual fields which even in the very early stage of paresis may show some contraction—a forerunner of the more or less marked amblyopia present in advanced cases. Such contraction does not, however, serve to differentiate paresis necessarily from neurasthenia, in which in exceptional cases contraction of the visual fields occurs as a fatigue symptom. Retinal hyperesthesia, on the other hand, is not a symptom of paresis and its existence would be decidedly in favor of neurasthenia. It is immaterial whether the physical signs first make their appearance as a loss or increase of tendon reactions, as loss of light reflex, as tremor of the lips or tongue, or in the form of speech disturbances. Their significance is always the same. This is also the case with the transient paralytic attacks so frequently met with and I will not here discuss the relative importance of these symptoms, as their occurrence varies so greatly in different cases. My function, I take it, is to deal with that period of paresis before the physical signs become so pronounced as to render the diagnosis absolute. In all doubtful cases, before they have made their appearance, we must be guided in the formation of our opinion by the outlines which I have indicated in my remarks. I should add, however, that to my mind there is one general physical sign which precedes all of the others and by which we can distinguish often at a glance a case of beginning paresis from a case of neurasthenia or melancholia, and that is that curious and difficult-to-describe something which we term the "paretic manner." It is made up of those slight and almost infinitesimal changes in the facial expression and gestures of the patient which to the clinician stamp the case as one of paresis. I do not mean the gross smoothing out of furrows, the gross loss of tone in the facial muscles, but that something in the eye, the face, the gestures, the words, which reveal that the patient is not in close and accurate touch with his surroundings, with his business affairs, with the fact of his illness or, for that matter, with any subject. It is the presence of this symptom which in my opinion places in sharp contrast the neurasthenic and the beginning paretic. Finally, the significance of a history of specific infection, when present, is so obvious that it need not here be dwelt upon.

It is necessary to allude briefly to the differentiation of early paresis from alcoholism, brain syphilis, tabes dorsalis and brain tumor. When we come to draw distinctions between early paresis and alcoholism, we come to a subject of great difficulty and much uncertainty. The difficulty is largely due to the fact that many paretics manifest, as one of their early symptoms, alcoholic excess. It is not necessary before this audience to point out the general principles upon which a differentiation is to be attempted; how we should endeavor to establish the presence or absence of those fundamental qualitative changes which characterize the inception of paresis. If in an alcoholic subject obtusion to the properties and moralities be noted, we should remember that, unless alcoholism has become confirmed, these symptoms disappear during the intervals of sobriety when the patient is free from the action of the poison. In the paretic, on the other hand, these mental changes persist even after the alcohol has for a time been withdrawn. Further, the symptoms of a beginning alcoholic dementia are rather those of a simple dementia of which speech disturbances, incoordination of movement and somnolence are not features. There are general psychic obtusion, slowness of thought and some impairment of memory. If the alcoholism has become more profound, auditory and visual hallucinations with mental confusion or, it may be, with delusions of persecution or of jealousy, make their appearance. In other words, if alcoholic dementia be pronounced it is likely to resemble confusional insanity on the one hand or paranoia on the other, rather than paresis. Further, it is unnecessary to dwell upon the common symptoms of alcoholism, the bloated and relaxed countenance, the tremor, the gastric catarrh, the morning headache and the frequent peripheral neuritis. It is not necessary to call attention to the absence of pupillary phenomena, of characteristic changes in the knee-jerks, of tabetic pains, and especially of the paretic manner. Notwithstanding, as I have just stated, because of the frequent coexistence of paresis and alcoholic abuse, the differentiation is at times exceedingly difficult.

It is not my province here to enter into the extensive subject of the differentiation between paresis and brain syphilis. I can only say that we should remember the general rule that in brain syphilis the symptoms are those of an organic lesion, either limited or diffuse, without qualitative mental changes. Somnolence and headache may be equally present, but tremor of lips, tongue or hands, slight incoordination, change in the facial expression, the paretic manner, none of these play any rôle in syphilis. In the early stage it is again the absence or the presence of the qualitative mental changes that is important. The differential diagnosis may, however, be extremely difficult and at times impossible. Here prolonged observation of the patient is the only satisfactory plan.

The relationship between paresis and locomotor ataxia, in the early stages of the two affections, is another subject which is fruitful of discussion, but one which would here be unsatisfactory; first, because the physical signs in the early stages are very few, and, secondly, because some of them are common to both affections, *e. g.*, tabetic pains, incoordination of movement, lessening of knee-jerk and beginning optic atrophy. As is well known, many cases which begin with the symptoms of tabes dorsalis end in undoubted paresis. All cases, however, of locomotor ataxia, presenting anomalies of the symptom-complex, such as preservation or exaggeration of the knee-jerk, or slight ataxia of the legs with marked ataxia of the arms—cases of so-called superior tabes—should be regarded with suspicion. It must be frankly admitted, however, that in the early stages a differentiation between paresis and tabes may be impossible. This is not surprising when we consider that paresis and tabes are not only very closely related, but are possibly one and the same disease. The pivotal point is, again, not the presence or the character of special physical signs, but the presence of mental changes. If these be absent, paresis cannot be diagnosticated. Similar remarks apply to the differentiation between paresis and other gross organic disease of the brain. Brain tumors, for instance, when in silent regions may produce none but general symptoms, and, unless they be situated in the frontal region, mental changes are as a rule entirely wanting. Here again, it is the absence of qualitative mental phenomena upon which in early cases the differentiation is to be based.

Let me say, in summarizing my views concerning the early recognition of paresis, that it is of the utmost importance to study carefully the symptoms of every so-called case of neurasthenia that comes before us. After physical signs have made their appearance, the recognition of the disease is relatively easy; but it is during the initial period, the neurasthenoid stage, as I term it, that the diagnosis should be made. It can be made, I believe, in the larger number of cases by bearing in mind the clear and well-defined symptomatology of chronic fatigue—neurasthenia—on the one hand, and the special symptoms of the mental weakness and degeneration of paresis on the other.

TREATMENT OF PARESIS; ITS LIMITATIONS AND EXPECTATIONS.[1]

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The *treatment of paresis* as a subject for discussion presents itself, at first sight, as difficult and uninspiring in view of its hopelessness. But I am asked to speak especially of the limitations and expectations of treatment; this leads the way to a field of inquiry in which lie some of the most profound problems in medicine. The time now available being brief, I shall speak of our present unsatisfactory means of treatment of a disease as yet regarded as incurable, only to indicate the limitations under which we labor.

The diagnosis being made, the prognosis being a fatal ending usually two to four years after the manifestations of the disease have been recognized, we are limited to measures for palliating its consequences. The patient needs immediate protection when the onset of the disease is an acute attack of melancholia or mania; when the dementia comes on insidiously, protection of the personal and business interests both of the patient and of his family is equally important. Custodial measures become therapeutic, together with treatment of general symptoms, when remissions are promoted through improvement in physical health and strength, neurasthenic conditions being especially characteristic of the prodromic and early stages of the disease. The prescribed method always includes "tonics" in all appropriate forms, and a generous diet with interdiction of alcohol. Hydrotherapeutics, now coming into more general use, is often beneficial.

It is aside from all these generally indicated expedients for the management of the cases that the real therapeutic problem arises and baffles our art. The psychiatrist finds himself here in a remarkable position; it is that of being confronted by a well-defined mental disease-form, with concurrent physical signs more distinctive than in any other mental disease. These point, by both sensory and motor symptoms, to lesions of the nervous system that show a recognizable underlying disease-process with progressive structural changes producing chiefly extensive degeneration of the nervous system. More than in any other of the true mental diseases, which are such because the mental symptoms essentially constitute the disease-form, have researches in anatomical pathology been possible in the attempts to find an explanation of the mental symptoms. But, for some recent years, little advancement of our knowledge in this direction has been made. Therefore the psychiatrist, who must really do his clinical work from the standpoint of the general physician, has found a barren field of limitations for his therapeutic guides when he turns to neurological histology and pathological findings. This is a most significant fact, for, so far as this line of research can go, we are likely to come to the same limits in other forms of mental disease should there ever be discovered concomitant structural changes characteristic of them. The pathological anatomist as our pioneer leads us to this frontier of our realm—to the Castle Mystery, and lays siege to it; when he fails to carry it by assault, he saps and mines, and employs the strategy of hypothesis, spies of subtle inference and arrows of swift conjecture, often Parthian arrows indeed. Still we wait before the impenetrable wall of our difficulty. It is with us, both in general medicine and psychiatry, much as it was with our fathers when they said the signs of inflammation are heat, redness and swelling. The work of penetration into that which underlies has gone deeper, but, our attitude of inquiry remaining precisely the same, we have the superficial replaced by the parenchymatous. We are reaching the limits of knowledge through the study of change in structural form and appearances to the eye; the infinitesimal becomes the insurmountable. We are learning that, inasmuch as psychology and physiology can tell us nothing to explain the normal mechanism of mental activities, we can not expect to see, through the microscope, an explanation of disordered thought and feeling.

It would be a cause of great regret on my part if there should seem to be any disposition, in the hospital work which I represent, to diminish in the least the importance of research in pathological anatomy. But there are reasons for seeking an explanation of our clinical problems in the still deeper underlying plane of physiological chemistry. Let me quote from a statement made from this point of view:[1] "That microscopically visible structural changes in any tissue, or in the cells of any tissue, must be preceded by more or less pronounced metabolic changes is surely self-evident. Metabolic changes are chemical changes. Chemical changes are the physical exchanges and transformations that take place in the physical units of matter—the molecules; and the molecules are beyond the ken of the microscopist."

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[1] Read before the Medical Society of the State of New York, at Albany, January 28, 1902.

Turning now to etiology, in accordance with the principles of general medicine, we find limitations in the logic of treatment under the leading conceptions of the etiological factors of paresis, which are syphilis and heredity, with alcohol and the stress of modern life contributing. Following the guidance offered by these factors it has been common, outside of the hospitals, when the diagnosis is made and there is a suspicion of syphilis, to treat the cases with mercurials and iodides; in the hospitals this is found to be so futile and even harmful that the practice advocated by many alienists is generally followed in using antisyphilitic treatment only when active syphilis is present. With respect to heredity authorities differ. Our experience at the McLean Hospital agrees with that of many observers in the evidence it gives that paresis is less frequently due to heredity than are other forms of insanity. The rôle of heredity, in whatever relation it may bear to insanity in general, is that of inducing a constitutional instability. This neuropathic weakness when transmitted from a syphilitic parentage, or when induced as a sequel to an acquired syphilis, is regarded as having a like influence with stress from excessive mental activity. These predisposing factors working together tend to determine which part of the overworked mechanism is to yield to the active cause of the paretic disease. Alcohol may be a contributing factor also by reducing the normal resistence to morbid influences. In these ways comes the conception of neurasthenic conditions, constitutional or acquired, as having an intimate relation with the onset and course of the disease-process. Hence arise questions of early differential diagnosis between neurasthenia and paresis. Undoubtedly a neurasthenia may be the first to appear, when it is only the effect, and not a part of the cause, of the still unrecognized general paralysis. A history of syphilis always excites suspicion. Out of these etiological considerations we get, so far, no clearer guides for treatment; antisyphilitic measures, theoretically indicated, fail, and we are left to deal with a general and very empirical conception of neurasthenia.

The history of the course that has been taken by the study of this problem leads to an interesting field. While the limitations of our therapeutics continue to be apparent, I can now enter upon the second part of my subject—the expectations of treatment. That paresis has its chief cause in specific disease is not a conclusion from any discoverable relations between known specific and paretic lesions. The arguments deal with the prevalence in cases of paresis of a history of acquired syphilitic infection, or of its inherited effects. This doctrine is gaining ground, although some authorities demur; it is argued that, syphilis not being proven in many cases, it should be held not as an essential but only as a predisposing cause. Krafft-Ebing's dictum that general paralysis is a product of civilization and syphilization and Oppenheim's statement that paresis is the outcome of stress and syphilis give expression to opinions that indicate no more than a sequence of facts, showing the frequency with which specific infection is followed by paresis. As explanatory of a probable real connection in the pathology of these two diseases, it is becoming generally assumed that there is some intervening factor or condition that unites them. Oppenheim points to this in making the distinction that people without syphilis, but who are the subjects of mental stress, excitement and excesses, are liable to develop neurasthenia; the syphilitic neurasthenic, however, is liable to dementia paralytica. That there may or must be an intermediate element between the two diseases is now either intimated or assumed by most writers and alike by the advocates of the two leading theories of their pathogenesis relating respectively to the nervous and the vascular systems. We need not dwell upon the arguments for the opposing hypotheses, as to which is first in the disease-process, because they refer alike to the toxemias as intervening factors. Though still hypothetical this indicates, at least, the trend of the time in medicine.

We come now to the subject that is of prime importance in our discussion of expectations in the treatment of paresis, and of our grounds for them; our problem lies distinctly in the field of general medicine, putting the general physician and psychiatrist in precisely the same position toward it. It is not my part here to discuss the pathology of this disease, but it may be permissible to cite briefly some authoritative statements that set forth the aspects of the problem which I wish to consider.

Dr. Mott in the *Archives of Neurology* for 1899, indicating his reasons for supposing that paresis is a primary degeneration of the neuron with secondary inflammatory changes, says that "it is a parenchymatous degeneration due to a loss of durability of the nerve-cell—a premature decay of tissue in which inherited and acquired conditions take part, with the result that progressive death of the latest and most highly developed nervous structures ensues as soon as their initial energy is unable to cope with the antagonistic influences of environment."

Kraepelin,[1] regarding the changes in the nerve parenchyma as the primary alteration, thinks that the microscopical pictures of paretic lesions indicate intoxication. He says that everything points to a grave nutritional disorder and that the disease, is analogous to myxedema, diabetes osteomalacia, acromegaly, and the like; he suggests that we have to assume an intervening element between syphilis and paresis, just as we have, for example, a myxedema develop when the thyroid becomes destroyed by tuberculosis.

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[1] Otto Folin. Chemical Laboratory, McLean Hospital. Notes on Relation of Pathological Chemistry to Pathological Anatomy.

[1] Psychiatrie, 6th ed. Leipzig, 1899.

Wernicke,[1] regarding a primary destruction, or necrosis, of the nerve tissue, analogous to the degenerative neuritis in the peripheral nervous system, as the primary process, says the paralytic etiology resembles most the action of poisons. But in general paralysis we must assume that the poison is constantly being produced in the body, as the progressive fatal characteristics can not be otherwise explained. This poison must be metasyphilitic, yet we must assume a bacterial action as the basis of the peculiar condition. The purport of this is that, as in other progressive remitting diseases, the acute and quiescent phases of paresis represent, respectively, the resistive reaction of the body to some toxin, and remissions of its activity indicating cessation of the toxemia. The views of authorities generally harmonize with the conception of intervening factors. These may, of course, have their place outside of, as well as in, the nervous system itself and elsewhere in the body. Although such representative opinions do not yet furnish us with guides to treatment, as they hardly take us beyond the stage of hypothesis, yet, nevertheless, they point to a toxemic origin in the pathogenesis. Thus we as psychiatrists find ourselves engaged in the general movement of the time and, sharing in the great advancement in general medicine, we are encouraged in our expectations of things hoped for in our special field of mental medicine.

On the common ground of general medicine, it is of interest to refer to a statement made from this point of view by Sir Dyce Duckworth of the principles upon which our new position is based. In an address, in November, 1900, to the British Medico-Psychological Association on "Mental Disorders Dependent on Toxemia" he expressed the generally accepted opinions. He said that toxemic states have been long recognized as clinical features of disease, and the sources of them are as varied as are the separate toxic elements which induce them. Progress in physiological chemistry and bacteriology has now furnished us with the means to explain these conditions. Referring to the action of auto-intoxication, disturbing the harmony of intimate brain-cell metabolism, he noted the deliria of many debrile conditions as examples of distinct toxic infections. After mentioning myxedema as leading, in like manner, to mental disorders resulting from altered metabolism due to deficient thyroidal influence, it is stated that general paralysis is now regarded as coming into the category of auto-intoxications. His suggestion as to the course of the pathogenesis is one of the interesting variations of the hypothesis. Syphilis, although the common antecedent of paresis, does not provide the toxin, and we must therefore view its part in the etiology as leading to progressive degenerative nervous changes, which in turn so modify the intimate metabolism of the tissues as to set free toxic elements. As the various toxic agents which gain admission to the circulation manifest elective affinities for particular systems of neurons, hence the varied results of perverted nutrition and metabolism with the production of new toxins. While these fields of study are yet much unexplored, there are many investigators in them, and here and there knowledge is gained that guides to treatment.

We have now come in this discussion nearly to its ending, yet upon the grounds so far considered we find ourselves still in the region of hypothesis with waiting expectations of new light upon the treatment of paresis, but with reasonable faith in their final realization. To this practical end, indeed, we may be nearer than has yet been supposed. A new phase of the problem has been presented in contributions by Dr. Bruce and Dr. Ford Robertson at a meeting, last June, of the Medico-Chirurgical Society of Edinburgh. Dr. Bruce, in his observations of paresis for a number of years, noted the common occurrence of gastric and intestinal disorders, with exacerbations accompanied by rise of temperature and hyperleucocytosis. He suspected a toxemia due to intestinal bacteria. Obtaining blood-serum by wet cupping for lumbago from a paretic patient having a well-marked remission in the second stage, he treated two earlier progressing cases with subcutaneous injections daily for three weeks. The result was complete remissions in both cases, then of two years' duration. Further experiments are in progress to procure blood-serum from a horse immunized to bacillus coli. Dr. Bruce believes that small subcutaneous injections of such serum for three weeks or a month may produce artificial remissions of this disease. His conclusions are:

1. General paralysis is a disease directly due to poisoning by the toxins of bacteria the point of attack of which is through the gastric and intestinal mucous membrane.

2. The poisoning is probably a mixed poisoning, but the bacillus coli is apparently one of the noxious organisms.

3. The result of treatment with serum, taken from a case of general paralysis in a condition of remission and injected subcutaneously into an early progressive case, points strongly to the fact that some form of serum treatment is the proper treatment for this as yet incurable disease.

Dr. Robertson, in his observations upon this subject, referring to Dr. Bruce's cases, takes the position, contrary to the opinions already cited, as to pathogenesis, that the theory of the existence of chronic toxemia is virtually a further elaboration of the view that the cerebral vascular lesions constitute the first anatomical alteration in general paralysis. He cites authorities defending this view and reaches the following conclusions:

General paralysis is dependent upon the occurrence of chronic toxemia of gastro-intestinal origin; the toxins are mainly bacterial and are formed in consequence of a partial breakdown of those forces by which the harmful development of the micro-organisms that constitute the ordinary flora of the alimentary tract is normally prevented; the toxins are absorbed and tend specially to produce proliferative and degenerative changes in the vessels of the central nervous system, and these vascular changes tend to set in earliest in those parts of the brain that are relatively best supplied with blood, because their walls are brought in contact with the largest quantities of toxins. The part played by syphilis in the pathogenesis of general paralysis and tabes dorsalis is essentially that of altering the natural immunity; and the treatment should be directed primarily to the correction of the disorder of the alimentary tract. Probably the only means by which it will be found possible to check the excessive growth of the gastro-intestinal bacteria is that of the employment of specific antitoxins; and to avert the disease by such means may be more practicable than would at first sight appear, because it is probable that the specially injurious toxins are the products of only a few bacterial forms.

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[1] Grundriss der Psychiatrie, 1900, Leipzig.

These contributions are very interesting and are most stimulating to further researches in the direction pointed out by Dr. Bruce's work. While not yet conclusive these results are consistent with the general trend of opinion that the toxemias are the intervening factors; and, for the present, it is along this line of research that our expectations are led. If they are verified as a substantial addition to our knowledge then we may be fairly placed on new ground in respect to mental diseases in general.

This discussion of the treatment of paresis was hardly expected, I presume, to lead to any definite conclusion; indeed the statement of the subject suggests speculative inquiry. But still we are on firm foundations, upon the principles of bacteriology and physiological chemistry. There are several by-products of such a study as this. We are shown the limitations of pathological anatomy that, instead of expecting to find explanations of mental symptoms in terms of structure, we must seek in the deeper plane of the chemistry of nutrition explanations of both function and structure and of the changes in them. We see that the final test of all observation, hypothesis and theory is treatment; that we who minister to the sick must apply all the needed knowledge that can be gained; that we, with our problem in the living patient, do right to exalt the clinic, for the uses of which we may claim all the contributions of expert research. It is in the arena of the clinic that the patient and the physician are the leading players in the game of life and death.

Mt. Sinai Hospital.—Dr. S. S. Goldwater has been appointed assistant superintendent of Mt. Sinai Hospital and will enter upon that service on the completion of the new buildings at Fifth Avenue and One Hundredth Street.

SCLEROTOMY, ANTERIOR AND POSTERIOR; WHEN INDICATED IN GLAUCOMA; METHOD OF OPERATING.

BY DAVID WEBSTER, M.D.,
OF NEW YORK.

In regard to sclerotomy anterior I have very little to say. I performed the operation in a very few cases years ago, and with so unsatisfactory results that I abandoned it. Still there seems to be a general impression among my colleagues that the operation of anterior sclerotomy has "come to stay;" that it has a place in ophthalmic surgery and that it should be resorted to in hemorrhagic glaucoma especially. I think it might be advantageously resorted to in acute or subacute glaucoma supervening upon nephritic retinitis. In my experience iridectomy fails to relieve the tension and arrest the disease in the cases referred to. The operation amounts to little more than a large paracentesis. There is no doubt that it will bring about a lessening of the tension of the eye, at least temporarily. There is also little doubt that in most cases of glaucoma iridectomy is the better operation. As to the method to be pursued in operating, probably that described by De Wecker is as good as any. Those who wish to know what is worth knowing of the history of sclerotomy anterior and posterior are referred to Dr. Knapp's article on "Operations Usually Performed in Eye Surgery" in Norris and Oliver's "System of Diseases of the Eye."

As to sclerotomy posterior in glaucoma, my experience has been restricted to a single case; but the result of the operation in that case was so gratifying that I feel justified in giving a report of the case in full.

On February 27, 1901, I was called to see Mrs. A., then in her ninetieth year. I found that she had chronic glaucoma supervening upon retinal hemorrhages and hemorrhages into the vitreous which had been observed by another ophthalmologist some months previously. Vision was reduced to perception of light. The pupil was slightly dilated and sluggish, the anterior chamber rather shallow, the tension a little increased, and, notwithstanding the turbidity of the vitreous, the optic disk could be seen to be cupped and atrophic looking. There was no pain, however, and no redness of the eyeball, the only thing the patient complained of being the loss of sight. I advised the moderate use of the other eye, which was normal, and gave her a prescription for a 2-per-cent. solution of pilocarpine, to be dropped into the eye in case there should be pain. I was sent for again two weeks later (March 13th). The patient informed me that three days previously she had become interested in a new edition of Boswell's life of Johnson with copious fine marginal notes, and had read it nearly all day. At night the eye began to be painful, notwithstanding the use of the pilocarpine eye-drops, and had become worse. I found the eyeball deeply injected, no reflex from the fundus, no perception of light, the tension more increased than when I first tested it, the pupil more dilated and the anterior chamber nearly obliterated.

I ordered eserine, cocaine and iced cloths. Her general condition was looked after in consultation with her family physician. I would have done an iridectomy as soon as possible, but, in order to accomplish that, anesthesia by ether or chloroform would have been necessary. On account of the great age and extreme feebleness of the patient both the family physician and myself were unwilling to assume the risk. All the measures resorted to, local and general, failed to relieve the pain, and it became evident that something must be done in the way of an operation, else the patient would die of exhaustion due to sleeplessness, anorexia and innutrition.

Although I had had no experience with posterior sclerotomy, except in detachment of the retina, I determined to try it in this case, if I could obtain the patient's consent, because (1) it would not require any considerable amount of self-control on the part of the patient, (2) because I knew that under cocaine the pain caused by the operation would be comparatively slight, and (3) because I had heard and read of cases in which posterior sclerotomy had relieved the pain and quieted the eye. Accordingly, on March 27th, two weeks after the onset of the attack, assisted by her family physician, having dropped some of a 6-per-cent. solution of cocaine into the eye half a dozen times at intervals of three or four minutes, and having washed the eye with a solution of bichloride of mercury, 1-5,000, I made a meridional incision into the eyeball between the insertions of the external and inferior recti muscles. Holding the eyelids open with my index and middle fingers, for I knew that speculum and fixation forceps would not be tolerated, I punctured the eyeball just back of the ciliary region and extended the incision as I withdrew the knife so that it was about three times as long as a Graefe cataract knife is wide. Some fluid escaped as I withdrew the knife, but apparently only a few drops. A bandage was applied and, to the gratification of all concerned, as soon as the immediate, slight hurt of the operation had passed off, the pain in and about the eye ceased. I washed and rebandaged the eye daily, but used no mydriatic or myotic. On the eighth day, as the wound seemed sufficiently healed, I removed the bandage, but as there was some pain on the following night I reapplied it and the pain ceased. I kept up the bandaging nine days longer and then finally discarded it. There was no more pain. The eye continued to whiten up and the general health of the patient improved. I saw her last on April 25th, when the eye looked about as white as the other. At the site of the wound was a delicate, slightly dark colored, linear scar that was hardly noticeable.

Cancer Hospital for Scotland.—J. K. Caird has given £18,000 for the erection of a cancer hospital in Dundee. He also has guaranteed £100 annually for five years for a laboratory for cancer research.

A DANGER FROM THE EMPLOYMENT OF THE WEIGHTED VAGINAL SPECULUM.

BY FREDERIC GRIFFITH, M.D.,
OF NEW YORK;
SURGEON, BELLEVUE DISPENSARY; FELLOW OF THE NEW YORK ACADEMY OF MEDICINE.

THE writer, when a student of medicine, received instruction in the principles of surgery from John Ashhurst, and many times heard that master deprecate the employment of any mechanical device which took away control by the surgeon's hands.

A case in which the weighted vaginal speculum played the part of a complicating factor was as follows:

Mrs. A., aged twenty-five years, came to me six months before the present history to consult me in regard to apparent tumorous growths in her breasts. I had her under observation for a month, when she passed from view with the understanding that if increased growth did not occur I was not to see her until fall. Later events have proved to my mind that the breast conditions were largely due to the sexual life that the woman led; married five years and both parties sexually very active, they indulged only in restricted intercourse until last summer, when a visit to the scenes of early life exhilarated the couple to such degree that unbridled license was taken and received with resultant pregnancy. Having exhausted the household remedies of sympathizing friends in the country place, in the interior of the State where she was, the woman returned to town and called on me to produce an abortion, giving financial straits and morning sickness as reasons. Inquiry led me to believe that the woman was three or four weeks pregnant. Ignoring the uterine "trouble," I treated the morning sickness, giving her ¼-grain calomel tablets, of which I ordered her to take one night and morning, and desired not to see her for a month, when I contemplated assuming the rôle of a moralizer (the writer has at least one boy of good size to produce as an exponent of the success of this plan of action). The woman returned at the end of a week and stated that her stomach was now all right but that she had not become unwell; I repeated my request and she went away somewhat out of humor. Nine days later I was asked to call and learned upon arrival at her house that three nights before she had, unaided, passed a No. 8 (English) woven catheter into her uterine cavity. Drawing up a statement of the nature of the case and that she alone was responsible for her condition, I had the woman sign her name in the presence of a female friend who was attending her. This was for my own protection and if at any time during the course of treatment death had appeared imminent I should have communicated with the district attorney.

The patient had been taken with vomiting upon the second day and had had three chills prior to my visit. I found her with tongue coated, bowels loose, a tender belly; and with pain in the small of the back. She was in a vivacious frame of mind, her eyes sparkling with undue brightness, pulse good at 108, temperature 99.6° F., and respiration 28. There had been no hemorrhage, but a penetrating stench came from the small quantity of shreds and fluid which soaked the two or three napkins used during the day.

In lieu of bags, hot stove-lids were wrapped in blankets and placed beside the patient's legs and body, and the bowels were moved during the night with a calomel purge. At noon the next day, having the assistance of an anesthetizer, the woman (under ether) was placed in the lithotomy position at the edge of a table and a bulb-weighted, irrigating vaginal speculum of medium size, weighing twenty-four ounces, was placed in position, hanging down over the perineum from the posterior commissure. Finding the vaginal portion of the cervix to be of a mottled, livid and yellow color, I, without the aid of a tenaculum or volsellum forceps, inserted a dilating forceps and enlarged the cervical canal to a finger breadth, carrying on copious irrigation meanwhile with sterile water as hot as could be borne. Curetting the uterus with a dull, flat curette and continuing the irrigation until three gallons had been employed, the lower genital tract was left with a fresh, clean smell, water coming away clear and the tissues blanched. The first two days I used a sterile gauze drain, later and, until it was expelled by the contracting cervical canal, a thick-walled glass tube about the size of a No. 30 F. sound. Irrigations were carried on through this, it being removed from time to time for cleansing.

The first irrigation and curettement, during which time the speculum was in place, occupied thirty minutes. A gauze pack for the vagina and a perineal binder completed the dressing. The patient reacted well, with an evening temperature of 101° F., pulse 120, and respiration 23, and next day had a temperature of 99.6° F., pulse 96 and respiration 20; the discharge continued to be slight and with a fresh odor.

Upon the fourth day, without systemic reaction, the discharge became very fetid. Two irrigations had been given daily and were continued to the end, the nozzle-tube inserted by the aid of a Sims speculum or the handle of a curette. An examination showed the floor of the vagina to be sloughing in an outline fitting the speculum first used. A weak solution of hydrogen dioxide caused the slough to disintegrate rapidly and the ulceration healed in the course of three weeks.

During the fifth week following operation the patient had a return of menstruation, lasting four days and normal in its characteristics. A final examination made two days later showed the vaginal cervix completely restored and the site of the sloughed area in the vaginal floor appearing like a well-healed, repaired laceration.

This woman came to operation in excellent condition, of good muscle and of strong nervous energy, and the writer feels justified in extending the warning against the use of such weighted instrument for any length of time in a case in which pressure opens the way for the assaults of infection.

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ORTHOPEDIC OPERATIONS FOR INTRACTABLE CEREBROSPINAL CORD LESIONS, WITH REPORT OF TWO CASES.[1]

BY HOMER GIBNEY, M.D.,
OF NEW YORK.

Many years ago at the Hospital for Ruptured and Crippled I was attracted by the apparently hopeless condition of many children, victims of various forms of paralysis for the relief of which apparatus alone was employed, and this in many instances ill fitting. I was told that little else could be done beyond hand manipulation or massage in a crude way, and, like all lay people, I looked upon this irremediable condition as most pitiable. Gradually tenotomies, fasciotomies, myotomies and more recently tendon transplantion were begun and since I have been in medicine I have seen many of these patients, now grown into young womanhood and manhood, walking about quite well, some still wearing braces, but vastly improved by the timely interference of the orthopedic surgeon's tenotome or fascia knife, promptly followed up by a carefully-fitted apparatus.

Not a few of the many troublesome cases of cerebrospinal cord lesions come to us for apparatus, the neurologist having employed various remedies, such as electricity, massage, arsenic, phosphorus, silver nitrate, and all the nerve tonics known. The patient's general condition is fair or good; the disease, having been arrested or having run its course, has left him with a deformity, a dangle leg, contractures, a talipes equinus, cavus, valgus, varus, calcaneus, or with a combination of two or more of the various types of clubfoot, and not infrequently deformities of the upper extremities. These are the deformities of spastic paralysis and of infantile paralysis or anterior poliomyelitis, and are permanent until corrected. Those of compression paraplegia, of Pott's disease of the spine readjust themselves under carefully prolonged treatment and call for no operative procedure.

Friedreich of Heidelberg, in 1861, first classified and described the symptoms peculiar to a series of cases. Gowers, Oppenheim and others recognized them and these cases came to us as hereditary or Friedreich's ataxia.

The cases I report present the major portion of these symptoms and the operations done were for the corrections of the existing deformity which would make locomotion more easy. The point I wish to emphasize is to operate on these unyielding, stubborn and intractable deformities of cerebrospinal origin and, having corrected or overcorrected them, to apply promptly a well-fitting, comfortable apparatus best suited to each individual case, thus facilitating locomotion and in a degree ameliorating the condition.

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[1] Read before the Orthopedic Section of the New York Academy of Medicine, 1901.

Case I.—Female, aged fourteen years. Mother died of some acute illness. Seven children in family, three of whom are cripples; two girls showed evidence of disease at seven, one boy at eight years. Patient complains of pains in lumbar region, she tires easily, faints and is unsteady in gait. Lower extremities frequently become numb. Menstruated six months ago. Apparently growing more insecure on feet. At the physical examination she was shown to be a fairly well-nourished girl; ataxic gait; no tremor; no nystagmus; pupils equal and respond readily to light. Spine presents slight lateral deviation; right scapula is on lower plane than left. Patellar reflex absent. Both feet held in moderate cavus, right most marked. Plantar reflex accentuated. Great toes flexed at distal phalanx.

Operation was performed July 23d, under gas and ether. A long incision over tendo Achillis of left foot was made, the tendon exposed and lengthened. The edges of sheath, fascia and skin were approximated and sutured. The tendon of the right side was divided subcutaneously, the plantar fascia was severed and both feet were put up in plaster of Paris at 85°.

August 26th: Plaster dressing cut down and union found good and firm with fair voluntary dorso-flexion: double uprights with stop-joint at ankle later applied.

November 4th: Discharged; locomotion much improved.

Case II.—Male, aged twenty-six years Family history negative; one of five children, all of whom are living and well. Always well until, at ten years of age, he had an acute illness from which recovery was slow. When twelve he experienced difficulty in standing any length of time and walked with an effort; legs tired easily. Began to use crutch and stick as he matured. Dragged left leg in his effort to walk and gradually became more insecure. He was referred to me for "walking apparatus." The physical examination showed a well-developed man as to trunk and upper extremities. Walks with crutch and cane, awkwardly and with left leg rotated in. nystagmus. Pupils react to light readily. Spine slightly deviated to right. Patellar reflexes absent. Tactile sense diminished on left side. Left foot held in marked cavus and great toe slightly flexed, trigger shape. Right heel comes down well.

Operation was performed October 26th, under gas and ether. Left tendo Achillis divided subcutaneously; contracted plantar fascia severed; the great toe stretched and the whole foot put up in overcorrected position.

November 10th the plaster of Paris was cut down and union found firm; slight dorsoflexion. The foot was held in position by a reapplied light plaster-of-Paris bandage.

November 12th the dressing was removed and the foot was put into a shoe to which were attached double uprights with stop-joint at ankle. On the 14th he was discharged, walking with foot squarely and much more easily.

MEDICAL PROGRESS.

SURGERY.

A Rare Complication of Hernia.—Rupture is a vitally important condition and its unusual complications are worthy of note and record. The following rare case comes within this category and is reported by F. T. Travers (Lancet, Mch. 15, 1902). The woman was sixty years old, had a small umbilical hernia and suffered for years from winter cough. On February 20th a severe fit of coughing occurred and caused something to "give way" in the abdomen. Upon examination her physician found a mass of intestines protruding from an aperture at the side of the hernial swelling. Operation was absolutely necessary, but could not be done at her cottage. Her extruded bowel was wrapped in warm cyanide gauze, temporarily supported with bandages and the patient was removed to the West Kent General Hospital, a matter of difficulty because she weighed two hundred and twenty-five pounds. She showed shock upon arrival. Ether was at once administered; the abdominal wall was cleansed and the gauze wrapping removed and six feet of small intestine were found to be protruding from a rent one and one-half inches across in the site of the umbilical hernia; the gut was irrigated with chinosol solution, one in twenty-five hundred, and wrapped in warm sterilized towels; the wound in the skin was enlarged until the bowels could be replaced; a portion of omentum adherent to the interior of the sac was ligatured and removed and the walls of the sac were freed and sutured; the sides of the opening in the fascia were brought together by a continuous suture and after cutting out the portions of skin around the rent the wound was closed. Although after the operation the patient's condition at first improved somewhat, she later sank rapidly and died of heart-failure thirty-eight hours later. There were no ulcerations over the point of the rupture and no stretching or thinning of the skin. The sac and the skin were considerably thickened and had apparently torn in a straight line without any previous warning. Probably the patient's extreme obesity and the loss of elasticity of the skin accounted for the accident.

Spina Bifida.—The correction of malformations bears life-long importance from the point of view of the patient and its success is of material value to the surgeon. The treatment of spina bifida by the injection of a solution of iodine in glycerin, known as Morton's fluid, is in a few cases successful. Its use was extended by the recommendation of a committee on the subject appointed in 1885 by the Clinical Society of London. From the knowledge of the pathology of this disease one is justified in thinking that such injections effect a cure only in pure meningocele and that it can do no good in a meningomyelocele or in a syringomyelocele. Since, however, it is rarely possible to decide with certainty that any part of the spinal cord or its nerves is included within the sac, there is nearly always some risk in employing injections, even if the danger arising from infection through the puncture be not considerable. In consequence of this difficulty excision of the sac is now frequent. The two chief dangers are sepsis and the loss of cerebrospinal fluid, which may lead to grave disturbance of the circulation in the nerve centers. Scrupulous care will avoid the former and the danger of fluid-loss can be controlled by deliberation in the operation. Excision is applicable often in cases in which spinal nerves are contained in the sac, says G. L. St. George (Lancet, Mch. 15, 1902). They may be returned within the bony canal and such an aseptic operation must certainly be safer than the indiscriminate injection of an irritating fluid.

Internal Knee Derangement.—The diagnosis of this condition drawn from fifty-nine tabulated cases is summed up as follows by H. W. Allingham (Lancet, Mch. 15, 1902). All present either the characteristic symptoms of locking of the joint or else weakness with recurrence of pain and swelling, which are often the only signs of damage to the semilunar cartilages. This series of cases illustrates the following conditions: (1) The semilunar cartilage, interior or external, split, loosened, displaced or torn from either or both extremities, or the coronary ligaments; (2) loose bodies, either quite free or pediculated; (3) torn or hypertrophied alar ligament or fringes of the synovial membrane; (4) rheumatoid arthritis, roughened cartilage, thickened synovial membrane and osteophytic outgrowths; (5) no obvious derangement. There are some points which help in differentiating between these conditions, although not seldom symptoms strongly pointing to one may prove to be due to another. In cases of damage to the semilunar cartilage there are usually these features: Distinct history of injury originating the trouble; a well-defined site of pain on the inner or outer side of the knee according to the cartilage damaged; no palpable foreign body; no creaking in the joints. These same features usually characterize such cases as are due to affection of the alar ligament and localized hypertrophy of the synovial membrane. Cases in which a loose body is present may be similar to the above or the body may be found at widely different parts of the joint either from the pain or by actual discovery by the examining hand. A very loose semilunar cartilage may sometimes present the same peculiarity, but to a slighter degree because its appearance is limited to the side and lower part of the joint. Such a cartilage might be imitated by a loose excrescence due to rheumatoid arthritis.

Sciatica.—A fine point in the diagnosis of sciatica is emphasized by R. von Baracz (Ctlblt. f. Chir., 1902, No. 9), although it was originally described by Lasègue. This phenomenon consists in the fact that usually in the presence of sciatica the affected hip may be manipulated without pain provided the knee be fully flexed at the same time. If, on the other hand, the knee be maintained in hyperextension and the hip then manipulated, immediately along the course of the whole nerve there will be pain, which is most marked and most constant at the point where the sciatic nerve passes out from the pelvis, namely, at the greater sciatic notch. Not only is the pain most acute at this point and under these conditions, but the tenderness is also increased. Another observer (Fajersztagn), to whom the author gives credit, states that a similar condition of pain and tenderness at this same point is aroused when the lower extremity of the healthy side is lifted with the knee in hyperextension. The observer of it calls this symptom the crossed sciatic phenomenon. By experiments upon the dead body it has been satisfactorily proved that the phenomenon discovered by Lasègue is caused by a mechanical stretching of the nerve. In the cross sciatic phenomenon the effect of the stretching is simply referred to the diseased nerve by a pull on the dura mater. Fajersztagn also proved this by numerous experiments on the dead body by means of which he found that even a moderate stretching makes a pull through the sac of the dura mater directly on the roots of the opposite sciatic nerve.

Prolapse of the Liver.—Attention is called to the clinical picture presented by the downward displacement of this organ and a method for its relief by surgical means by A. F. Jonas (Jour. Amer. Med. Assoc., Mch. 29, 1902). In discussing the etiology of this condition several factors must be considered: (1) The intimate contact of the two arched surfaces between the liver and diaphragm, (2) the suspensory ligaments; (3) the intimate relations between the vena cava inferior and the liver; (4) the hollow viscera; (5) the abdominal walls. A defect in one or more invites a displacement, which may be brought about by trauma or by prolonged increase in the weight of the liver from venous or biliary obstruction. Clinically one usually finds relaxed abdominal walls, gaseous distention, constipation, gastroptosis and enteroptosis, pains under costal arch, increase of liver dulness, often a biliary obstruction with its particular symptoms. In the treatment of this condition the author recommends suturing the gall-bladder in the uppermost angle of the wound which has been made for the removal of the gall-stones, close under the costal arch. The sutures can pass through the bladder wall, the parietal peritoneum and muscles. He has attained excellent results.

Gelatin as a Hemostatic.—A little history in medicine is at times a relief. Y. Miwa of Japan (Ctlblt. f. Chir., 1902, No. 9) states that gelatin was used as a hemostatic in Europe in the beginning of the last century, while in China and Japan there are records as early as the third century, A.D., according to which it was used for this purpose in all kinds of hemorrhage. It seems to have been taken to Japan chiefly by the Chinese themselves, among whom it was in use rather generally at about 1000 A.D. Of course, in China and Japan at these times subcutaneous and intravenous injections of gelatin were unknown, while a solution of it in water was the chief method of administration. Occasionally it was given in powder form, for example, in nose-bleed by insufflation. The Orientals used it also in hemorrhages from the lungs, the genito-urinary apparatus, the womb, especially in abortion, the intestines, including the rectum, and in anemia, not always pure but usually mixed with other drugs and, as a rule, in comparatively large doses. It was commonly combined with the following drugs: Coptis brachypetala, pæonia officinalis, panax ginseng, gardenia florida, rehmannia lutea, scutellaria macranta, artemesia moxa, and powder made from the rhinoceros horn. A favorite prescription there even to-day is the following: Coptis brachypetalæ, 2 parts; scutellariæ macrantæ, 1 part; pæoniæ officinalis in decoctum, 1 part; mix and add gelatin, 3 parts, egg albumin, 2 parts. In addition the Chinese and Japanese used it as a foodstuff and a means of enriching the blood, just as to-day iron is prescribed. The question whether gelatin acts as a hemostatic the Chinese answered in this manner. Copious bleeding is equivalent to some anomaly of the quantity of the blood or of its thickness. This the gelatin sets to rights. It enriches the blood, thickens it, and thus stills the bleeding.

Ileus Due to Gall-stones.—The observations made in this condition are, when the great frequency of cholelithiasis is considered, still too incomplete to warrant a solution of the question as to whether an expectant treatment or surgical interference offers the better chance for the patient. As neither the size of the gall-stone nor the length of time it may have been present in the intestine appears as the invariable cause of the ileus, interest centers in the circumstances which constitute the immediate reasons for the attack, and their diagnostic features. From a clinical study of his cases Karewski (Deut. med. Woch., Mch. 20, 1902) finds that patients who had apparently no previous cholelithiasis or had made a complete recovery, as well as those subject continuously to biliary colic, could be suddenly affected with acute intestinal occlusion due to the presence of a biliary calculus. The latter in its passage through the canal may at times become closely grasped by the gut, so that an attack of well-marked ileus is followed by a period of complete immunity from symptoms. The stone may be passed without creating any further damage or it may cause perforation with the consequent results. These phenomena form a series of varying clinical pictures difficult of diagnosis. As the ileus is caused by the presence in the gut of large moving stones, the question remains as to the manner of their getting into the intestinal tract without having caused symptoms. It is found that such large stones pass directly into the duodenum through an area of peritoneal adhesions between the gall-bladder and the gut with only indefinite pains and digestive disturbances, which in women are often diagnosed as hysterical complaints when in reality they are signs of a chronic cholecystitis and a circumscribed peritonitis. The mere presence of a large gall-stone in the gut is not, however, an exciting cause for an intestinal obstruction without other contributing factors. Among the latter one may include those frequent peritoneal changes in the neighborhood of the stone, whereas the intestinal wall itself may be free from any trouble or later become sufficiently damaged to permit the egress of bacteria. Peritonitis results, with an accompanying intestinal paralysis which completes the condition of ileus. Peritonitis is, however, not always necessary to call forth this disturbance of peristalsis, which may be entirely reflex to a condition in some other part of the tract. The variety of these phenomena therefore makes a differential diagnosis difficult. An important feature in these cases is early fecal vomiting without much impairment of the general condition, which is in marked contrast to the great prostration of volvulus and other intestinal constrictions. Age (sixty and over) and sex (greater in women) are also to be considered. Pains, although colicky at intervals of several hours, are usually circumscribed. Distention is not marked; when the lesion is high, the abdomen may even be retracted. Pulse is fairly good. These are early symptoms and if unrelieved are succeeded by the signs of peritonitis and complete obstruction. Onward progress of the stone may cause relief of symptoms with a return later on. Although the author advises a trial of medical measures, he advocates early operative interference if no immediate good result be obtained.

Spontaneous Dislocations in Infections.—A contribution to the scanty literature of this subject is made by A. Poli (Gazz. degli Osped., Mch. 9, 1902) in a report of spontaneous luxation of the femur in a typhoid patient. The case was that of a child of five years in whom the disease had run a severe course, with serious cerebral and intestinal symptoms, and was further complicated by gangrenous ulceration in the anal region, and dental caries, with necrosis of the lower jaw. The condition of extreme lowered vitality indicated by the last-named conditions is believed to be responsible for a relaxation of the fibrous ring encircling the acetabulum, thus allowing the head of the femur to slip from its socket when the child was moved, the round ligament, owing to diminished resistance, being ruptured at the same time. There was no evidence of purulent exudation in the joint. A complete cure was effected by immobilization and traction after the joint was set.

Hemorrhoids.—The operative method employed by Halsted of Johns Hopkins in cases of somewhat extensive hemorrhoids is described by Nassau (Medicine, Apr., 1902), one of his former house-surgeons. The operation is done either under local or general anesthesia. The first step in the operation is a slight stretching of the sphincter, which should not, however, be carried to the point of paralyzing the muscle. The upper bowel is then excluded from the field by means of a gauze tampon introduced through a speculum. The incision is circular and runs just within the margin of the skin; it includes ordinarily more than one-half of the anal circumference, and is carried down to the fibers of the external sphincter. The inner layers are then carefully stripped away from the external sphincter, and the dissection is carried well above the pile-bearing area. During this part of the procedure, the index finger is held in the rectum. All bleeding points are caught, and every clamp is tied before the next step of the operation is begun. Three interrupted subcutaneous sutures of silk are now placed in position to anchor the bowel to the skin. The stitches do not puncture the mucous membrane. The hemorrhoidal area is now cut away by a transverse incision, the severed vessels being caught. Finally, the skin and mucous membranes are closely approximated by interrupted sutures of fine silk. The bowels are moved on the fourth day, the patient gets up on the sixth, and is discharged on the tenth. The advantages of this mode of procedure are summarized as follows: (1) The sphincter is not injuriously dilated; (2) the wound is not open to infection from the bowel; (3) the blood-supply to the pile-bearing area is obliterated; (4) little, and in some cases no, tissue is excised; (5) healing is rapid; (6) recurrence is a rarity; (7) secondary hemorrhage and stitch-abscesses do not occur.

Ether Narcosis.—American surgeons, who have so generally adopted ether as the best anesthetic, should be interested in the following conclusions of Campiche (Rev. Med. de la Suisse Rom., February, 1902), who worked in Roux's clinic. He analyzed 745 operations of every kind, of which 511 were performed under ether, 205 under chloroform, 21 under mixed narcosis, and 8 (goiters) without narcosis. The previous and subsequent conditions of heart and lungs were carefully investigated and tabulated. Campiche found that (1) ether is a specific irritant for lungs and bronchi, and is, therefore, absolutely contraindicated in all diseases of these organs; (2 and 3) even though this rule be respected, however, a certain number of accidents will be encountered: pneumonias occur more often after chloroform than after ether in individuals with sound lungs; (4) the unfortunate after-effects of many operations are attributable not to the anesthetic, but to the impaired vitality of some of the principal organs of the patient; (5) operations which especially predispose to pulmonary complications are herniotomy, laparotomy, and strumectomy; (6) ether is preferable to chloroform for three very cogent reasons, *viz.*, the after-effects are less dangerous; there is less danger of heart collapse; there is a far greater "margin of safety," by which is meant that the limit of safety is considerably beyond the point at which the narcotizer has induced surgical anesthesia.

Imperforate Anus.—Whenever these cases are encountered the medical attendant should examine for a fistula between the rectum or its representative and the genito-urinary organs, especially in female children. The following brief notes of such a case corroborate this view and are given by B. C. Stevens (Lancet, Mch. 22, 1902). The child presented all the symptoms of intestinal obstruction and failing strength. He made an incision in the perineum and searched in vain for the bowel. While making an examination of the vagina he discovered high up in this passage signs of meconium and, on further search, a small sinus extending upward and backward into the rectum. A probe was passed in and then a curved artery clamp, by means of which the bowel was brought down into the perineal wound, opened and stitched to the skin there. The child was neglected by its parents and the ignorant midwife and died in the absence of the operator a few days later. The examination of the vagina in this case obviated the necessity of a colostomy, which is to be avoided whenever practicable. The rule to examine the genito-urinary apparatus before proceeding to such a step is certainly most excellent.

Diabetes and Operation.—The desirability of operating in cases of diabetes has been doubted, except as a last resort to save life. W. G. Spencer (Lancet, Mch. 22, 1902) contends that the rule should apply only to acute diabetes and not to chronic cases and cites the following example in support of his opinion: A woman, aged sixty-one years, admitted November 8, 1901, discharged March 8, 1902, with a weight of one hundred and fifty-two pounds, twenty years before had weighed two hundred sixty-six pounds and seven years ago two hundred sixteen pounds. The diabetes appeared twelve years ago, with thirst as the chief symptom, but during the last five years has been moderate in its symptoms. October 1, 1901, a small crack appeared at the side of the second toe-nail of the right foot and moist gangrene followed with the formation of sinuses and extensive necrosis. There was no pulsation in the limb below Scarpa's triangle. For five weeks medical treatment with special diet and codeine was given and the leg was frequently dressed. The necrosis extended, but the temperature remained normal. On two days, November 28th and December 13th, there was no sugar in the urine. On December 17th amputation at the middle of the thigh was done, a little sloughing of the skin-flap occurred, but the recovery of the patient was good. Sugar was present in the urine up to January 10th; it was absent after that. On March 8th she was discharged with only a small granulating wound in the thigh. The chronic course of this case is the significant factor in every probability in the success of a major operation.

Restoration of Sphincter Ani.—A new method of making a sphincter ani after the natural one has been almost entirely removed is described by C. H. Chetwood (Med. Rec., Apr. 5, 1902). The patient had been unsuccessfully operated upon seven or eight times after having the sphincter almost entirely torn away by being gored by a steer. There was complete incontinence of feces. A large semicircular incision was made with its convexity toward the coccyx and extending just beyond it and from a point about one inch in front of the anterior limit of the anus and on a line, externally, with the tuberosity of the ischium on one side to a similar point on the other. The fatty tissue was dissected out after this flap was turned down and the rectum exposed. The gluteus maximus was freed and a ribbon-shaped piece of muscular tissue, one-fourth of an inch in breadth and one-sixteenth of an inch in thickness was dissected from the gluteus muscle on either side, leaving the attachment to the coccyx. These bands were then transposed so that the fibers would decussate with one another around the rectum and were sutured in front. After one year the patient is able to hold even liquid feces.

A New Deep Suture.—Sutures protecting the abdominal wall are of interest. S. L. Woomer (Lancet, Mch. 29, 1902) presents the following: A long piece of silkwormgut is threaded on a double needle and the first insertion is made at the bottom of the wound, including the peritoneal fat and the peritoneum. The needle is then carried across the peritoneal section and made to emerge in the subperitoneal fat of the other side at a point opposite that of its first entrance. Thence it is carried across the wound and made to penetrate the two layers of the aponeurosis within the rectus muscle. The other needle is now made to embrace the opposite side and is then crossed to penetrate the integument. The suture is completed with the first needle, which issues from the skin on the opposite side, thus producing a double figure-of-eight arrangement. The suture is tightened with a slight rocking movement and tied in the ordinary manner. In order to effect its removal the silkwormgut is pulled upon on one side of the knot and then cut close. Thereupon it recedes within the skin. Slight traction upon the knot is then necessary to withdraw it. It will thus be seen that one can obtain a perfect apposition of a deep wound without any of the disadvantages which accompany a permanent buried suture.

Appendicitis.—The tip of the appendix, if the organ be long enough or the cecum unduly movable, may reach remote points of the abdominal cavity. J. H. Galton (Lancet, Mch. 29, 1902) reports a case of appendicitis in which the organ was lodged in and adherent to the femoral canal. The tenderness was limited practically to McBurney's point, but an incision four inches long was made parallel to Poupart's ligament and one and one-half inches above it. The head of the colon was found adherent to the anterior abdominal wall just below the incision. The appendix was found with difficulty; it was bound down by a strong meso-appendix adherent throughout its entire length to the posterior wall of the abdomen and dipping down for a quarter of an inch into the femoral canal. A strong and old adhesion also bound it to the ileum. The organ was finally traced down to the femoral canal, to which its tip was adherent.

X-ray Treatment.—The increasing use of the Roentgen rays in modern therapeutics has brought forth innumerable reports of cases treated by this means. W. A. Pusey (Jour. Amer. Med. Assoc., Apr. 12, 1902) reports a mixed series of thirty-six cases with varying degrees of successful results. They include lupus, epithelioma, carcinoma of the breast, neck, and hand; also abdominal cavity, sarcoma, keloids, pseudoleucemia, leucemia. The majority were considered hopeless, and, even if not cured, a stay in their progress seems of sufficient importance. The rays evidently have a destructive effect on the tisues of low vitality, and the author's sections show that they cause a degeneration of carcinomatous tissue and a disappearance of this degenerative substance, presumably by absorption. The formation of firm, healthy scar tissue follows. A similar process occurs apparently in lupus, sarcoma, and pseudoleucemia. The advantages of the method are as follows: (1) It is painless; (2) it destroys diseased tissues, but leaves the healthy tissue undisturbed; (3) it leaves small scars; (4) it can be used in places where the surrounding healthy tissue cannot be sacrificed, *e.g.*, about the eye and nose; (5) it is applicable to many inoperable cases; (6) it often relieves pain. The author restricts the use of the X-ray and does not advise it as a substitute for operations in the operable malignant growths. In cutaneous lesions it is, however, recommended as a primary method of treatment. Its use thus far warrants the following: (1) In all cases of malignant disease which have been operated on there is reason to urge the subsquent use of X-rays as a prophylactic measure. (2) In all inoperable cases of malignancy the method should be tried, even if it only relieve pain and inhibit the progress of the disease. The author has had least success in internal neoplasms and none in a case of leucemia. A rapidly-growing round-cell sarcoma subsided quickly. The best results were obtained in epithelioma and lupus.

Acute Appendicitis.—Appendicitis is such a protean disease and its symptoms and physical signs are so misleading at times that most men are satisfied if they are able to make a diagnosis and determine the indications for operation. The greatest success will not be reached, however, till one is able more definitely to prognosticate the actual situation and condition of the affected parts. C. A. Elsberg (Med. Rec., Apr. 5, 1902) has given a few points which may be helpful to the diagnostician. A knowledge of the position of the diseased organ may influence the prognosis and the urgency for operation. When the appendix is behind the cecum an inflammation is more liable to be walled in and the danger is less, especially in adults. An appendix internal to the colon is dangerous on account of the early invasion of the peritoneal cavity. When a tumor cannot be felt he believes that much information can be obtained by certain signs. Some writers claim that the organ lies beneath the point where there is the greatest tenderness, but after locating the organ by this method the author has frequently found the appendix at some distance. He now takes McBurney's point as the base of the appendix and then asks the patient to point as quickly as possible without looking at it to the spot on the abdomen where he has the greatest pain. He should be made to repeat the procedure several times, till one is sure he is correct. A line joining these two points should locate the position of the appendix. This method has been successful in a large majority of cases, but cannot be employed till the pain becomes localized nor after general peritonitis has developed. A mass in the right iliac region in appendicitis generally means that the inflammation has extended beyond the appendix. Either there is an abscess or a mass of adhesions around the organ. If the mass be soft and tympanitic, it is probably a mass of intestines with a small abscess, perhaps in the center. Large abscesses may be recognized by their characteristic feel and immobility. An exudate which persists longer than two or three days without diminishing in size, or which is increasing in size, always contains pus as its nucleus. A large abscess may persist for weeks, however, without causing further trouble. In regard to the diagnosis of a general peritonitis, besides the usual signs, the author is inclined to lay especial stress upon the rigidity of the abdominal muscles, particularly of the left rectus in addition to that of the right. This rigidity is frequently present before the pulse has begun to rise. It is a rigidity that does not disappear under the influence of narcotics, but only under deep anesthesia. It almost always means a beginning general peritonitis.

Gall-bladder Disease and Appendicitis.—It is extremely difficult at times to differentiate between these two conditions, for the signs and symptoms may be very deceiving. J. C. KENNEDY (N. Y. Med. Jour., Apr. 5, 1902) reports the case of a patient who gave no previous history of similar trouble, but who had a sudden attack of pain, severe and persistent in character, at first diffuse, later localizing at the right iliac region. He had considerable vomiting, some constipation, no jaundice and a moderate temperature. Appendicitis was diagnosed, but operation showed the presence of a large calculus in the cystic duct. Another patient gave a previous history of gall-stone colic and had a sudden attack of severe pain in the right hypochondrium, with tympanites and tenderness of abdomen soon developing, and a mass palpable high up underneath the ribs. Operation showed it to be a case of general peritonitis secondary to rupture of the appendix. The author says that in these doubtful cases it is perhaps best to begin the incision half way between the two sites and subsequently extend it in the required direction.

Gangrenous Appendicitis.—A fatal case of this treacherous disease is reported by S. M. EVANS (Med. Rec., Mch. 29, 1902) to show that none of the cardinal symptoms may appear to arouse one's suspicions of a peritoneal cause. The case was that of a girl, nine years old, who gradually developed the symptoms of a toxemia, with vomiting and diarrhea at the beginning; every twenty-four hours marked a decided advance in the pulse and toxemia, the temperature remaining practically negative till thirty hours before death. Examinations by Drs. Bull, Janeway, Winters, and Holt failed to disclose any cause for the toxemia. He suggests, therefore, that in the presence of constitutional symptoms of toxemia, the source of which cannot be found, if the merest suspicion of abdominal involvement exist, it ought to be justifiable to make an exploratory incision.

Total Obstructive Urinary Suppression.—Cases of obstructive suppression are of peculiar interest (1) from their rarity; (2) from the "latency" of the symptoms produced; (3) from the good results to be anticipated from operative intervention; (4) from the light which they throw upon the pathology of uremia and on the functions of the kidney. Thus interestingly W. MITCHELL STEVENS (Brit. Med. Jour., Mch. 22, 1902) introduces an article and reports a case. The points of particular interest center on the following facts: (*a*) There was a history of prolonged and well-marked glycosuria. (*b*) A very short history of symptoms leading to renal calculus. Three months before death there was absolutely nothing to suggest kidney lesion of any kind. (*c*) The onset of total suppression of urine without symptoms of renal colic. (*d*) The suppression was *absolute*. Not a drop of urine was passed from April 5th until the patient's death on April 12th. In most recorded cases of obstructive suppression small quantities of pale urine have been passed; indeed, it was pointed out by the late Sir William Roberts that this is a condition characteristic of "obstruction." (*e*) The absence of uremia; seven days passed without the elimination by the kidneys of a single grain of urea, yet there was not a single symptom pointing to uremia. (*f*) The duration of life. In this case it was seven days. Roberts states that it is as a rule from nine to eleven days. It is possible that had this patient lived longer, symptoms of uremia might have developed, but they are not the general rule in such cases. The autopsy showed dilatation of the pelvis of the right kidney with atrophy of the organ, proving that at an early period it had ceased, through blocking of the ureter, to perform its function. The left organ had undergone the usual compensatory enlargement and had up to the time of the blocking of its ureter done all necessary work. The stone which blocked the ureter, while small, was large compared with one reported by Sir W. Roberts, which weighed but gr. 1⅓. That so small a concretion should be the direct cause of death is remarkable. The pelvis, here was not in the least dilated—a fact which shows that more time than seven days is necessary for its accomplishment and that, inasmuch as but a few drops of pale urine were found, the pressure necessary to stop the secretion is very slight. Self-evidently, the treatment of this condition is operative as soon as a diagnosis is established, albeit there are some cases of spontaneous recovery reported, in one of which were passed twelve pints of urine within a very short time after the stone found its way to the bladder. It must not be forgotten that ninety per cent. of all cases of obstruction are due to stone and that lodgment of a calculus does not by any means always cause pain. It is evident from a study of this and of cases parallel to it that uremia in no way depends on an accumulation in the blood and tissues of excretory products which are normally excreted by the urine. There is an important difference in the pathology of the two conditions, called "obstruction" and "non-obstruction" suppression. In the first the kidneys are normal; in the second they are abnormal. Does not this suggest that there is a very important function of the kidney quite aside and apart from excreting? When a case of nephritis advances to the stage of suppression the other functions of the kidney are also in abeyance. If a stone plug the ureter of a healthy organ, on the other hand, the excretory function alone is stopped. Thus one can conceive that the kidney has a double function—that of creating an "internal secretion" as well as playing the rôle with which one is familiar. Is not the organ, like many others, "secretory," as well as "excretory"?

Surgical Treatment for Puerperal Pyemia.—For that form of sepsis after childbirth which depends upon infected emboli carried from the thrombosed pelvic vein, F. Trendelenburg (Münch. med. Woch., Apr. 1, 1902) advises surgical interference similar to that for sinus thrombosis, namely, the tying of the infected vessels. The operation is much more difficult, since not one, but several vessels are involved and since generally both sides are affected. The veins which have to be considered chiefly are the spermatic and the hypogastric. The latter can be reached extraperitoneally by an incision, a finger's breadth above Poupart's ligament, beginning in the line of the epigastric artery and ending four or five centimeters mesinal to the anterior-superior spine. For the spermatic vein, the incision is prolonged to the tip of the eleventh rib, with the patient in the lateral position, and the ureter sought for; the thrombosed and much thickened vessel will usually be found in close proximity. The laxity of the abdominal walls found after pregnancy renders the operation very easy. In recent cases the thrombi may be removed; in older ones the simple ligation must suffice on account of the danger of opening the peritoneum after an extensive dissection. The indication is always to operate as early as possible and, though a single chill may not definitely decide the diagnosis, a repetition leaves hardly any room for doubt as to the condition. Concerning the question as to which side is to be operated upon, the bimanual examination must determine where the greatest tenderness on pressure is to be found. In over half the cases observed, both sides were affected and in doubtful instances all the vessels should be tied.

Nature of Urethral Fever.—In all cases of urethral fever coming under notice, R. Bertelsmann and D. Mau (Münch. med. Woch., Apr. 7, 1902) have systematically made bacteriological examinations of the blood. In most the results were positive and the staphylococcus proteus and the colon bacillies were found pure or in combination, generally in large numbers. It is probable that the germs gain their entrance into the blood through some tear of the mucous membrane. It is difficult to explain their abundance, since a multiplication is said not to occur in the circulating blood, and it seems likely that they first increase in the stagnant veins about the posterior urethra. The fact that the decomposing urine is pressed forcibly into the wounded surface owing to the arterior obstruction generally present also predisposes. The rapid defervescence of so many cases may be due to a low virulence and rapid excretion and the inability of the germs to find a *locus minoris resistentiæ*. In all the cases here reported the same bacteria that occurred in the blood were found in the urine. In the rare cases in which cultures were negative, it may be assumed that the ordinary media were insufficient for their propagation. The lesson to be drawn is to avoid frequent sounding and catheterization and to excise the stricture as soon as the patient's condition permits.

Foreign Bodies in the Skull and Their Discovery by the X-ray.—The medical world has recovered from the wave of enthusiasm with which the X-ray was heralded and received as a means of diagnosis and is now soberly setting itself to discover and record its advantages and disadvantages, dangers and limitations. From time to time various authors present ingenious, more or less accurate means of calculating the distance of foreign bodies from the surface and from well-known deep landmarks. The skull has been quite a large field of activity in this regard, and any means of arriving at the necessary information directly without resorting to mathematics is suggestive and may be worthy of permanent use. H. Stamm (Ctlblt. f. Chir., 1902, No. 12) elucidates the following ingenious procedure by which he located a bullet in the brain with all the accuracy essential to good surgery. The details of the methods are briefly these: A strip of soft sheet lead was cut, say, two centimeters wide and long enough to reach from the root of the nose to the nape of the neck. At regular intervals, which he made one centimeter, the strip was studded with flat-headed nails, vertically, and secured in position with wax. The strip was then applied to the skull in the middle line from the root of the nose to the nape of the neck and secured with bandages from the forehead to the occiput. A radiograph was now taken in such a position that the plate was nearly as possible parallel with the row of nails. The bullet was seen to be beneath the interval between the twenty-third and twenty-fourth nails, slightly projected toward the interior of the skull. This place was suitably marked on the skin and then the strip was removed and placed over this point parallel with the coronal plane of the body. Another radiograph was now taken and the bullet was found to be under the ninth nail, similarly projected a short distance toward the center of the skull. This second point was therefore marked as representing on the surface of the skull practically the exact position of the bullet. A small skin and bone flap was made above it and the bullet found exactly where it was indicated. These two pictures are the only ones necessary if the foreign body be near the surface. If, however, it be deeply placed, for example, in the neighborhood of the temporal lobe, a third radiograph is necessary, with the strip of nails horizontally placed corresponding as nearly as possible with the level of the body, as indicated in the first two pictures. The three planes of projection thus obtained will locate any foreign body with the smallest possible chance of error and without the delay of mathematical computations.

Temporary Carotid Closure.—The essential life of certain parts of the body has long ago been known to outlast brief cutting off of the blood, but it is only recently that this has been attempted in connection with the brain. G. Crile (Annals of Surgery, Apr., 1902) gives an experimental and clinical research of the temporary closure of the carotid arteries. His physiological observation is as follows: The immediate effect of temporarily closing one of the arteries was to increase the blood-pressure, but the usual compensation followed and the normal level was restored. There was no effect upon the respiration. Simultaneous closure of both carotid arteries produced a greater rise in the pressure, which by compensation, however, seemed to return to the normal and a slight decrease in the respiratory action was noted. In no instance was there any striking result. In the recovery experiments in which the clamps were allowed to remain on the arteries and in which the wound pursued an aseptic course, no effect upon the normal, and a slight decrease in the respiratory to the anesthesia. The animals seemed playful and strong. Even after twenty-four hours of complete closure there was not much gross evidence of injury to the vessel wall. The circulation through the clamped portion was readily reestablished. If, however, the clamps were applied, say, for two days and infection occurred then the lumen of the vessels sometimes remained closed. As to the after-effects, in no case was any noted. The aseptic cases made good recoveries. Circulation was reestablished and no impairment of consequence was observed. In the brain after death no changes were found, neither emboli nor thrombi. The most convenient, accurate and safe clamp seemed to be one operated by a set-screw. One blade is longer than the other and turned up at one end so as to prevent the artery from slipping out. Over the blades rubber tubing is drawn to minimize the pressure on the vessel-walls. In applying the same it is necessary to bear in mind that the blades need only to be approximated, not pressed. The adjustable screw gives so perfect a mechanical control of the lumen of the vessels as to enable the surgeon to perform the operation and secure the bleeding vessels with a minimum loss of blood. He suggests the following clinical applications: Twenty minutes previous to making the incision, $^1/_{100}$ of a grain of atropine should be given, when the trunks of the vagi and their superior laryngeal branches are likely to be involved, for the purpose of preventing possible inhibitory action. Each common carotid artery is then closed by means of a small clamp, like the above. When blood might enter tne respiratory track, the patient should be placed in the Trendelenburg posture. This partially compensates for the lowered cerebral blood-pressure. While this posture does increase the venous and capillary hemorrhage, the increase of the venous pressure diminishes the danger of the entrance of air into the larger venous trunks should they be accidentally injured. Such hemorrhage is relatively of little consequence unless from the larger veins. After the operation, if the Trendelenburg posture has been employed, it is safer to restore the patient to the horizontal position before removing the clamps, because after taking off the clamps the blood-pressure rises and this effect should not be augmented by the position. The control of the arterial hemorrhage is absolute, except in such vessels as receive direct collateral circulation from the vertebral arteries. According to the researches of Bayless and Starling there are no vasomotor nerves supplied to the vessels of the brain. The circulation is largely mechanical. The blood-vessels of the brain should therefore be more amenable to the employment of such technic than the vessels of almost any other organ of the body in which the blood-supply is more or less regulated by the vasomotor mechanism.

Stereoscopic Radiography.—The advantages of looking at pictures stereoscopically are several. A single X-ray plate shows the shadow on one plane, and thus the true relation of points in the other planes is lost. In order, therefore, to determine the position of a foreign body, photographs must be taken in the other planes, usually two at right angles to each other. From these by measurement and calculations a fair degree of localization may be obtained. A stereoscopic plate on the other hand is apt to give at one view a very good idea of all these factors. A. B. Johnson (Annals of Surgery, Apr., 1902) describes minutely a most beautifully equipped table for such purposes. Those who desire to construct a special table must study out his details, but those who cannot afford it may under his recommendations adopt the following plan: Upon a framework of planking, two feet long and as wide as the table which is to be used for taking radiographs, are nailed two little cleats ¼ inch high, running crosswise from one side of the planking to the other, separated by a little greater distance than the width of the envelope enclosing the size of photographic plate which the operator will use. Across the top from one strip of wood to another is tacked a sheet of fiber paper, as it is called. A shallow, wooden draw or plate-carrier is made of such a size and depth that it slides easily in and out between the strips of wood and beneath the fiber cover. The part of the body to be photographed is placed upon the fiber covering and the plate in its envelope is pushed beneath it in the drawer. A picture having been taken, the drawer is pulled out, the plate removed and a new one inserted beneath the part to be photographed and a second picture is taken. Sometimes it is necessary and usually it is wise to hold the part pictured absolutely quiet by strips of adhesive plaster stuck to the skin and to the table. The tube must of course be moved 2½ inches horizontally or vertically, according to the point from which the photograph is taken (which distance represents that between the two eyes of the average person) before the second photograph is made. The two photographs, each produced from its own point, 2½ inches apart, will constitute the stereoscopic view of the patient. The Wheatstone Reflecting Stereoscope is, in Johnson's opinion, a very serviceable means of examining the photograph obtained.

Treatment of Ascites.—Surgical interference in this condition when due to hepatic cirrhosis is commented on by H. Kümmell (Deut. med. Woch., Apr. 3, 1902). He reports a series of seven cases in which Talma's operation was done. This consists of relieving the portal congestion by suturing the omentum or even the liver to the anterior abdominal wall, in order to form a new collateral circulation. The author does not consider of importance the usual contraindications, *i. e.*, icterus, acholia or hypercholia of the feces, non-functionating liver cells, but even in advanced cases advocates the operation as a palliative measure. In three of his cases there was no return of the ascites; the remainder were relieved for a time but were fatal later from exhaustion or intercurrent disease. In cases in which autopsy was performed, a cure of the cirrhosis itself was not in evidence, but the establishment of a collateral circulation as a relief measure is sufficient, the author claims, to warrant the operation in every suitable case.

Jejunostomy in Contraction of the Stomach.—Two cases of marked contraction of the stomach came under the observation of M. Von Cackovic (Arch. f. klin. Chir., Bd. 65, S. 409). This writer doubts the existence of idiopathic cirrhosis of the stomach. Cases of marked contraction are regarded as invariably due to diffuse carcinoma of the gastric wall, or to inflammation resulting from localized carcinoma. The patient can take only small quantities of food, frequently vomits even these, has constant pain and is rapidly emaciating. The stomach cannot usually be made out either by percussion or by palpation. The stomach-tube meets with resistance after passing fifty centimeters or less beyond the teeth; only a small quantity of food can be introduced through the tube. The presence of adhesions or metastases usually negatives total extirpation of the stomach, rendering this, the only radical treatment, either impossible or useless. Gastro-enterostomy cannot be performed without a healthy stomach-wall; hence, jejunostomy alone remains, and is to be performed when the disease has not advanced so far that all operative procedure is hopeless.

Undescended Testicle.—The advisability of scrotal transplantation in this condition has long been a matter for controversy: many claiming that an undescended testicle, both before and after puberty, is atrophic and functionless and also liable to inflammation or degeneration at a later date. A series of five successfully operated cases is recorded by J. Wolff (Deut. med. Woch., Apr. 3, 1902), all of which were marked by severe symptoms, and the good results obtained lead him to advance conclusions differing from those usually accepted. It is usually conceded that the symptoms attendant on cryptorchism can be relieved by transplantation as well as by extirpation, and that the mental effect of the former on the patient is of great moment, yet it is urged against the conservative operation that the transplanted testicle is subjected to irritation and liable to inflammation and may, moreover, become the seat of malignant disease. The author's patients have been subjected to severe physical strain since the operations (six to nine years) without evil results. The direct origin of malignant neoplasms from transplanted testicles has never been substantiated. The theory of malignancy was deduced from the finding of hyperplastic connective tissue in the atrophied organs. It is probably more correct to believe that the tendency toward the formation of neoplasms is dependent on the irritation to which the testicle is subjected in its unnatural attitude and these conditions are done away with when the organ is fixed in a protected position in the scrotum. The author also finds that growth of the testicle *does* take place after transplantation. This operation should be done early, before any complicating symptoms have appeared, in all iliac or inguinal retentions, independent of herniæ or inflammatory conditions, and extirpation should be limited to those cases in which a malignant growth is present or is developing. The indications for extirpation of a retained testicle should not vary from those for the organ normally placed.

Hemostasis in Wounds of the Liver.—After a detailed description of three successfully-treated hepatic wounds, V. Martinelli (La Riforma Medica, Mch. 24, 25, and 26, 1902) reviews the numerous measures which have been employed for checking hemorrhage in such cases, concluding that the best method in punctured or incised wounds is immediate suturing of the liver. The objection that suturing, from the friable nature of the hepatic tissue, causes further injury through tearing and consequent increased loss of blood, is met by the statement that these dangers may be avoided by inserting the stitches some distance from the margins of the wound and by avoiding excessive tension. When, however, wounds are very extensive, or involve one of the large vessels, the author holds that suturing is too slow of execution and in these cases, as well as in wounds from firearms, the tampon is to be preferred, the most important ends sought being speedy hemostosis and prevention of infection. As to operative methods, the author prefers, for wounds from firearms, that of Micheli, as affording the best view of the surrounding organs, thus facilitating the search for secondary wounds. This consists in two incisions starting from the lower border of the fifth rib, the first beginning in the parasternal line, the second in the anterior axillary, both being carried down to the free border of the ribs, from this point converging to meet at a point four centimeters below the border; thence a single incision passes down the abdomen. The underlying ribs are resected and the peritoneum is incised. An operation performed upon the cadaver by Guidone is described, which seems to fulfil the conditions embraced in Micheli's method and has advantages over the latter in that it is more rapid and the pleura and diaphragm are spared. In this operation the first incision starts from the superior margin of the seventh cartilage and is carried down to the costal border; from this point, a transverse incision is made through the tenth intercostal space, passing back to the posterior axillary line. For punctured wounds, the costo-albo-abdominal method devised by the author is preferred. This consists of two incisions, one vertical, passing down from a point a finger's breadth external to the ensiform appendix, the second beginning at the same point and following the outline of the costal border at a distance of two centimeters from it. This gives a triangular, musculocutaneous flap which affords a full view of the left lobe of the liver and of part of the anterior and superior surface of the right; and if slight traction of the liver be exercised, the costal border being raised at the same time, the highest part of that organ may be seen. This operation has the great advantages of simplicity and rapidity. Statistics are quoted showing that surgical intervention has reduced mortality in punctured and incised wounds of the liver one-half; though in wounds produced by firearms the death-rate seems to be unchanged by operatve measures.

Prostatectomy.—Many of the ills of life would be avoided by the removal of the prostate gland when enlarged. Parker Syms (Annals of Surgery, Apr., 1902) shows an instrument called the bladder retractor for perineal prostatectomy. With its use the operation is performed as follows: The patient is placed in the lithotomy position under ether narcosis. A median perineal section is made extending from the bulbous portion of the urethra as far back as is safe without injuring the rectum. The membranous urethra is exposed by disecting backward until the tube of the prostate is reached. An opening one inch in length is made in the membranous urethra. A staff is introduced into the bladder and the bladder is now carefully irrigated, and then the rubber retractor collapsed is introduced through this opening into the membranous urethra so that the bulb is well within the bladder. Then this bulb is dilated to a diameter of two and one-half inches and the tube connected with it is clamped with artery forceps to prevent the escape of the water. Firm traction can be made on this tube, whereby the neck of the bladder and the prostate gland around it are brought downward into view and reached, whereby removal is made much more easy.

Spinabifida in Adult Life.—This is a condition which one is accustomed to see in childhood, as the patient rarely reaches adult life. F. F. White (Lancet, Apr. 5, 1902) reports a case in which he operated on a married woman, twenty-seven years old. After the deformity had ruptured during childbirth, considerable cerebrospinal fluid escaped, causing great pain in the head and lower extremeties. The usual operation was promptly done and recovery followed.

MEDICINE.

Carcinomatous Pleuritis.—Four cases of carcinomatous pleuritis are reported by N. D. Titow (Practichesky Vratch, N. Y., 1902). In two of the patients the lesion was primary and in the other two metastatic. The exudate was in all cases serous or bloody. The most characteristic clinical symptoms in these cases are in his opinion very rapid filling of the pleural cavity after paracentesis, very severe pain even when the cavity is full of fluid, which is not the case in rheumatic or tuberculous pleuritis, and absence of fever.

Banti's Disease.—In an extensive article on this affection, Dr. Grusdeff (Russky Vratch, 8, 9, 10, 1902) gives a review of the literature on the subject and also relates histories of three cases observed by himself. He thinks that sufficient attention has so far not been paid to this disease and that it is most probably more frequent than was thought at first. The early recognition of the disease is of greatest importance, as the outcome of it is absolutely fatal, unless the proper treatment—splenectomy—be resorted to in time. The author concurs with Prof. Senator in the opinion that a number of cases of cirrhosis of the liver of an undefined character, in which jaundice, dropsy, tumor of the spleen and hemorrhagic diathesis are combined, are probably cases of Banti's disease.

Newer Synthetic Remedies.—In his review of the newer remedies of 1901 Dr. Eichengruen (Zeitschr. f. angew. Chemie, 10, 217) criticizes the action of some medical journals in devoting space and wasting ink on the worthless recommendations of patent nostrums by certain physicians of repute, citing as example a so-called new remedy for baldness which a certain medical authority claims to consist of an extract of six different barks and roots in which sterilized whey is the solvent, to which are added borax, alum, glycerin, salicylic acid, lactic acid and sodium bicarbonate. In addition to this chemical nonsense, the physician claims that the temperature of combination must be carefully regulated in order to secure a preparation of *constant therapeutic* action. The doctor further adds, "If such preparations reach the limits allowable among proprietary nostrums, there are others which far excel this class and must be publicly denounced as swindles. To this class belong the *diabetic* remedy of Rahmer of Cassel called Musol, which consists solely of salol; differing only in price are the so-called harmless American synthetics sailing under false colors. For obvious reasons, the American inventor has always laid much stress on the cheapness of his products which were sold at extortionate prices. "Among the newer antipyretics examined by myself was Thermol, in which the cheapest of all remedies, acetanilid (40c. per kilogram), was *not* the most expensive ingredient." This new preparation, which is erroneously denominated as a synthetic alkaloid of the incorrect formula $C_{18}H_{15}NO_3$, consists, he says, entirely of an impure phenacetin.

Accidental Vaccination of the Nipple.—As a source of puzzling infection of the nipple and breast, vaccination must not be forgotten. F. SPURR (Lancet, Mch. 29, 1902) relates the following: The woman was thirty-four years old, and had had four children, feeding them all at the breast and suffering greatly from cracked nipples. All four children were vaccinated at the same time, while the youngest was two months old. The youngest child had a severe reaction, requiring treatment by the mother under the physician's orders, which she misunderstood and instead of washing her hands carefully had been in the habit of nursing the child at once. The result was that she inoculated one of the cracked nipples and suffered greatly in consequence.

Thoracic Phthisis.—A little truth is added here and a little there in medicine as in all sciences until the sum total is a large addition to human knowledge. The recent congress on tuberculosis in Great Britain is an example of what may be accomplished by combined efforts along single important lines. F. T. ROBERTS (Lancet, Mch. 29, 1902) gives a comprehensive set of thoracic diseases from which the following may be taken. His etiological classification is especially interesting and comprises the following important heads: Definite infection from without; infection from within (auto-infection); personal inherent predisposition; causes acting on the general system (acquired personal predisposition); external conditions and environment; special causes; local causes (acting more or less directly on the respiratory apparatus); local predisposing morbid conditions; general or remote predisposing diseases; acquired personal predisposition, many of the factors of which are directly avoidable by the patient himself and should be a matter of public knowledge. They are associated immediately with the individual and his mode of life, not only lower his system generally, but render the local structures much less able to resist the pathogenic action of the invading organisms, are too well known among physicians and almost make one despair of producing any marked or lasting effect upon the prevalence of consumption. They are as follows: (1) Insanitary conditions and surroundings, especially overcrowding, habitual want of ventilation, entire absence of sunlight, confinement in used-up or foul atmosphere, uncleanliness, both personal and domestic—in short, all forms of insanitary and unhygienic life. (2) Deficiency of food especially, in young growing subjects; sometimes undue religious fasting may so reduce the system as to make it positively vulnerable. (3) Intemperance and vicious habits of any kind, which tend to reduce the power of resistance. (4) Occupation. (5) Conditions occasioning frequent and more or less constant drain on the system, especially when accompanied by any of the other conditions above. Among these are unduly rapid childbearing, prolonged nursing and menorrhagia. (6) Mental depressing causes of any kind. Excessive work and study, prolonged worry, anxiety, profound grief, melancholia, shock, depression and the like. It is doubtless a fact that a due appreciation of these causes with efforts at removing them when discovered will have some effect upon the sum total of tuberculous cases in the world.

Characteristics of Genuine Vaccinia.—In order that the reputation of vaccination should not be injured by the results of spurious vaccine records, it is necessary to appreciate the characteristics of a successful inoculation. W. M. WELCH and J. F. SCHAMBERG (St. Louis Med. and Surg. Jour., Apr., 1902) describe the typical course of vaccinia and further state that when constitutional symptoms are very slight, as often occurs in the second or third vaccination, there should be no deviation in the development of the pock; that is to say, it should pass through the stages of papulation, vesiculation and pustulation. The raspberry excrescence, when seen, usually appears from three to seven days after vaccination and is utterly devoid of protecting power against either variola or vaccinia. It is quite similar to the papule of vaccination, but never reaches the vesicular stage. It remains hard, dense, bright red in color often for weeks, and is not followed by a scar. Although there has been much evidence urged against the glycerinated lymph, these writers have had excellent results from the lymph furnished by the Philadelphia Health Board. To show the protective value of vaccinia, they state that out of over five hundred cases of smallpox treated at the hospital during 1901 not a single patient had been vaccinated within five years and a majority had never been vaccinated. It is believed that it may be laid down as a rule that if a child be successfully vaccinated in infancy and again at the age of puberty, the protection will be permanent. An exposure to smallpox should, however, demand revaccination.

The Question of White Meat in Nephritis.—At the instigation of Van Noorden, who was clinically unable to differentiate the effects of light meats from those of dark meats in chronic nephritis, KAUFMANN and MOHR (Zeitschr. f. klin. Med., Bd. 44, H. 5) recently undertook anew an examination of the question. These writers declare that neither the albumin-content of the urine nor the total excretion of nitrogen is affected by the substitution of brown meats for white in the diet of nephritic patients. These findings contradict the dogma of the injurious influence of dark meats, and are entirely in accord with the chemical analyses of Offer and Rosenquist and with the clinical observations of Van Noorden.

Polymorphous Erythema in Pneumonia.—This cutaneous manifestation which sometimes appears in the course of croupous pneumonia is generally characterized by circular efflorescence. The spots are circular, of variable size, somewhat raised above the level of the skin, of an intense red, with slight central depression; they do not disappear on pressure; they are symmetrically disposed, and appear usually upon the extensor surface of the limbs. At times the eruption assumes various forms, such as the annular, nodular, or hemorrhagic spots appear, which are more or less indurated and pass through the various chromatic changes common to subcutaneous hemorrhages. Microscopically, the lesions have been found to consist in an acute, circumscribed inflammation of the skin, which, no specific organism being found to account for it, is presumed to be due to irritation of the vasomotor nerves by toxic substances circulating in the blood, and which are excreted by the skin. G. Recchi (Gazz. degli Osped., Mch. 19, 1902) reports a case of croupous pneumonia in which this phenomenon appeared at a time when the patient's life was in great danger. As improvement dated from the appearance of the eruption, he believes that it marked the reëstablishment of the defensive powers of the organism by which were eliminated the toxins elaborated by the diplococcus of Fraenkel and other concomitant agents.

Arthritis Due to Varicella—An infant just recovering from varicella was recently brought to Broca's clinic with a swelling of the right knee, which examination proved to be due to a collection of fluid in the joint. Complete extension of the leg on the thigh was impossible. The temperature of the patient was 39° C. (102.2° F.) Exploratory puncture revealed a cloudy fluid of a greenish tinge. Arthrotomy followed and the joint was drained. The discharge was examined the following day and streptococci were found. The patient's temperature was irregular for several weeks after the operation, marked daily oscillations occurring especially during the third week. Seven weeks after arthrotomy was practised the temperature was normal and the function of the joint was almost completely restored. In connection with the report of this case H. Lacasse (Gaz. hebd. de med. et de chir., Mch. 20, 1902) reviews the literature of arthritis as a complication of varicella. Cases of polyarticular as well as of monoarticular arthritis are described, the former due to general infection, the latter to local. The prognosis does not depend upon the constitutional manifestations, for these may be marked at the onset of a merely serous polyarticular effusion, but rather upon the appearance or non-appearance of pus in the joints.

Urinalysis in Stenosis of the Pylorus.—Exhaustive analysis of the urine of two patients suffering from non-malignant pyloric stenosis disclosed a number of features of interest, to which reference is made by C. A. Herter and E. K. Dunham (N. Y. Univ. Bull. of Med. Sc., Jan., 1902). In one of the cases the stenosis was marked; but little fluid passed into the intestine, and the volume of the urine was greatly diminished, the total for twenty-four hours usually being between 300 and 400 cubic centimeters and rarely exceeding 500 cubic centimeters. In the second case the quantity of urine was only at times below normal; here the stenosis was of a slighter grade. In both cases there was evidence of increased absorption of putrefactive products from the intestine. The indican reaction was exceptionally strong, but diminished in intensity after lavage was begun. In each instance the ethereal sulphates were increased in relation to the preformed sulphates. This relative increase is to be referred to the state of inanition and is commonly found in cases of advanced pyloric stenosis. The quantity of urea excreted daily in one of the two cases was very small. In the other case considerable quantities of nitrogenous food must have been absorbed, since the urea excreted amounted to over twenty grams daily. In both patients the excretion of uric acid was low as compared with the excretion of urea. One of the most characteristic features of inanition is the state of the chlorine excretion; in both patients this was extremely low. The fall of the chlorides in states of absolute or partial inanition is due to the fact that the organism even in starvation always remains saturated with chlorides and excretes only the chlorides in excess of the quantity retained for the uses of the cells and fluids of the body. Evidence was obtained of the excretion of organic acids in the urine of both cases, other than uric and hippuric, which are normally present. Whether the acids excreted were the result of disturbed metabolism, rather than disturbed digestion, is a question the authors are not able to answer.

Photography in the Early Diagnosis of Typhoid.—Some years ago it was shown that smallpox eruptions showed plainly on photographic plates, but shortly after it was demonstrated that ere the plate could register it the eruption could be felt by the examining hand. The same investigator who made these experiments, Heneage Gibbes (British Med. Jour., Mch. 22, 1902), now writes that by the use of orthochromatic plates the characteristic typhoidal eruption can be proven present before it can be either seen or felt. The procedure is a simple one. The head and face should be covered and the abdominal region of the patient exposed. A bit of printed matter should be stuck to the skin to help in determining the focus. The most rapid of the orthochromatic plates are used and out of a series of six exposures one should find at least two plates which show the eruption. An assistant should throw light on the abdomen from a mirror. No rule can be laid down to govern the exposure, but if the developing be carried on most carefully a certain amount of variation in exposure can be cared for. A very weak hydrokinon or paramol solution gives the very best results. In making a Widal test, should the reaction be indefinite, an orthochromatic plate will generally show the spots, if the case be typhoidal, and thus clear away doubt. Because of the annoyance caused the patient and because of the difficulty in arranging the apparatus, it is suggested that a telephoto appliance be used. If this will give as good results as the ordinary instrument it would seem that one has in photography a most valuable aid in positively establishing diagnoses in questionable cases.

Fusiform Dilatation of the Lower Esophagus.—The opinions concerning the origin of fusiform dilatation of the esophagus in its lower part diverge considerably; according to O. Zusch (Deutsch. Arch. f. klin. Med., Vol. 73), the following have to be considered: (1) Primary disturbances of innervation with secondary inflammatory processes. (2) Primary esophagitis with secondary cardiospasm. (3) Primary atony, either congenital, acquired or functional. To these must be added a congenital anomaly in which two separate dilatations, a supra- and an infradiaphragmatic one, are to be distinguished and which may cause no symptoms whatever. Any time, however, an accident, such as the act of vomiting, may lead to a stasis in the diverticulum with gradual dilatation and decomposition of the food, resulting in dysphagia, regurgitation of food and drink, leading to rumination by day and to coughing and vomiting by night. Sometimes there is pain behind the sternum which may resemble angina pectoris or intercostal neuralgia or may feel as if a heavy load lay over the stomach. The vomitus, as microscopical examination shows, does not come from the stomach. Objectively, the lower pole of the dilatation can be passed more readily with thick sounds than with thin ones. No diagnostic value can be attributed to percussion, auscultation, or to transillumination with Roentgen rays. If the tone of the esophageal wall be still fair or if it can be restored by proper treatment, the prognosis is relatively good, even if the disposition to new exacerbations does not disappear entirely. Therapeutically the greatest care is to be exercised in the use of sounds and only thick and soft ones should be chosen. For the first days of treatment the sac must be emptied and the esophagus washed, while food is introduced into the stomach exclusively by the tube. Later, small meals of fluid or semifluid food are to be allowed and this gradually increased in amount and frequency. At this stage the tube must be introduced before retiring to prevent stagnation over night. The use of alkaline waters is good for the esophageal catarrh. The treatment requires considerable perseverance and has not yet been developed surgically.

Nervous Symptoms of Pneumonia.—As in other diseases depending upon germs and their toxins, nervous symptoms are not rare in pneumonia. F. Schultze (Deutsch. Arch. f. klin. Med., Vol. 73) has frequently seen severe headache, delirium and hallucination, stiffness of the neck, pain upon pressure on the calves, herpes labialis, and increased, diminished or absent patellar reflexes. No mention has been found of the condition of the pupillary reflexes; the author has examined a number of patients for these. Not rarely they are absent or pathologically sluggish, even if the sensorium be clear, the background of the eyes normal, and contraction occur on convergence and accommodation. The explanation of this phenomenon may be in an increased intracranial pressure in the nature of an acute hydrocephalus or more likely, since other pressure symptoms are absent, in a selective action of the pneumonia toxin on the fibers controlling the reflexes.

Neuritis of the Splanchnic Nerve.—The autopsy of a case of H. Stilling (Deutsch. Arch. f. klin. Med., Vol. 73) forms a valuable contribution to the subject of diseases of the sympathetic nervous system. The abdomen showed the presence of a large amount of free fluid which had caused most of the symptoms during life. There were found also edema, fluid in the pericardial sac with dilatation and hypertrophy of both ventricles, and emphysema of the lungs with infarction. The spleen showed considerable hypertrophy and the kidneys congestion, while the liver reached into the iliac fossæ, weighed 2,350 grams and had a distinct nutmeg surface. A careful search of all the organs gave nothing to explain these lesions, except that there was a considerable degeneration in the splanchnic nerves. The cause of this could not be discovered.

Obliterating Fibrous Bronchitis.—This affection constitutes an acute or subacute occlusion of the finest bronchi by means of connective tissue and may, if extending over a large part of the lungs, rapidly lead to death. The patient observed by A. Fraenkel (Deutsch. Arch. f. klin. Med., Vol. 73) had been subjected to nitrous fumes and suffered from rapidly increasing dyspnea, cyanosis, emphysema, with crepitation at the bases; on the third day there was rusty sputum. There was neither dulness nor fever. For a few days the man improved, but death occurred shortly after, owing to respiratory and cardiac insufficiency. The author is of the opinion that the fumes first caused a hyperemia of the pulmonary tissues with cauterization of the bronchial mucous membrane. When the desquamated epithelium was thrown off by the sputum the patient felt better; but soon the development of young connective tissue from the raw mucosa led to an occlusion of so many of the finer air-passages as to be incompatible with life. The importance of this case for industrial hygiene is emphasized.

Suprarenal Diabetes.—The observation has recently been made that there is present in the suprarenal body a substance, which, if it gets into the blood, is capable of setting up a glycosuria. To determine how this glycosuria comes about, L. Metzger (Münch. med. Woch., Mch. 25, 1902) experimentally determined the condition of the blood in dogs fed with suprarenal extract. In all there resulted a hyperglycemia which proves that the kidneys were not involved and it seems probable that the toxic substance in some way inhibits the activity of the pancreatic cells.

Alkalinuria.—By the term alkalinuria the secretion of an alkaline urine through the kidneys is meant which subsequently, owing to its reaction, leads to precipitation of the phosphates and hence to turbidity. In the great majority of cases the cause is clear, for there is an increased alkalinity of the blood itself, and since the ability of the renal epithelium to hold back the alkaline ingredients of the blood is a limited one, these pass off into the urine. The condition of the blood is induced by the ingestion of alkalies or excess of vegetable food or by frequent vomiting whereby much acid is removed from the organism. Another form is considered a secretion neurosis of the kidney and includes neurasthenics, generally with hyperacidity and marked motor insufficiency. The cases published by H. Leo (Deutsch. Arch. f. klin. Med., Vol. 73) cannot, however, be classified as above, since none of the conditions necessary to render the blood more alkaline could be discovered. Treatment (change of diet, administration of acids) had little effect.

Scarlatina and Sublimate.—The doctrine that scarlet fever is caused by bacteria and probably by the streptococcus pyogenes in particular is gaining ground. Contributive evidence to this point is added by F. J. Rucavado of San José (La Sem. Méd., Mch. 19, 1902) who, during an epidemic of scarlet fever, found that baths, hot or cold according to circumstances, of 1 to 1,000 watery solution of bichloride of mercury are of value. He orders these baths from the beginning of the sickness and continues them for the first fortnight of convalescence. Under their influence, at all times favorable to the general condition of the patients, scaling of the skin is reduced to a minimum and occasionally is altogether absent, and in addition the skin that is shed is powerfully disinfected, a fact, the value of which must not be lost from the point of view of preventive medicine. In addition to the baths, he prescribes also the same medicine internally administered, but in doses which appear too large to deserve unqualified recommendation, namely, 0.008 grams every three hours. This treatment also shortens considerably the duration of the infection, decreases its severity and seems to check many of the complications.

Remarks on Typhoid.—The report of the army surgeons in regard to the prevalence of typhoid fever during the Spanish War disclosed several astonishing facts. It is said that army surgeons correctly diagnosed about one-half the cases and it is further ventured that this is as good as the average physician could do. W. S. Thayer (St. Paul Med. Jour., Apr., 1902) deprecates the possibility of the truth of such a statement and believes that it is due to the want of thorough hospital training before students begin practice. One is liable to expect from text-book knowledge that typhoid is characterized by particular symptoms which must be present in order that typhoid may be diagnosed. The essential features of typhoid are caused, however, by the general intoxication and not by the intestinal lesions. There is not one single necessary symptom of typhoid fever; nay more, there is not one pathognomonic symptom. The various symptoms which are usually present in typhoid may be either absent or so modified that their significance is not appreciated. It is more often the complete picture of the case and the combination of symptoms which lead the experienced man to make a correct diagnosis. In the army several instances are recorded in which 90 per cent. of the typhoid cases were diagnosed as malaria. It seems impossible for physicians to realize, or, if they do realize it, they are very reluctant to admit that the vast majority of cases of continued fever without apparent cause, which are resistant to quinine, especially if there be no leucocytosis, are typhoid fever. The commoner conditions with which typhoid fever is confounded, in which the primary seat is not evident, are ulcerative endocarditis, general tuberculosis, certain forms of malaria and occasional instances of late syphilis. He sums up the treatment under four heads: (1) Complete rest; (2) a diet as nourishing as the condition of the patient will permit; (3) measures to relieve the hyperpyrexia and to keep the skin and muscles in as good condition as possible; (4) an ever careful watchfulness for the various dangerous complications. In speaking of the care of the bowels the opinion which is reached by most clinical observers is that it is not advisable to administer laxatives by the mouth. In Osler's clinic enemata are given every other day in case of constipation, but otherwise the bowels are left strictly alone. He does not believe that intestinal antisepsis is of any value for the bacilli have, no doubt, already passed into the general circulation and cannot be reached. Furthermore, it is impossible to accomplish anything like intestinal antisepsis, and there is no evidence that this method has been beneficial.

The Tongue in Malaria.—Besides the silvery white tongue which is supposed to be characteristic of malaria, L. Lofton (N. Y. Med. Jour., Apr. 12, 1902) describes a condition which he believes to be pathognomonic of the disease. It consists of one or more, generally two, dark lines running from the base of the organ to the apex, and usually separated by a clearly-defined tract of clean mucous membrane about one-sixteenth to one-eighth of an inch wide. These lines are pyramidal in appearance and begin among the large papillæ at the base. In color they resemble the stain of a 10-per-cent. solution of permanganate of potassium.

Relation of the Tubercle Bacillus to Pseudoleucemia.—The etiology of Hodgkin's disease is one of the most elusive problems in medicine, and there are at present included under this term a number of separate conditions. Three forms of disease of the lymph-glands may give rise to the syndrome characteristic of pseudoleucemia: lymphosarcomatosis, tuberculosis, and a peculiar infectious process, the cause of which has not yet been discovered, but which by some is regarded as the only true form of Hodgkin's disease. The relation of the tubercle bacillus to Hodgkin's disease has been suspected, but with the exception of Sternberg no one has declared unqualifiedly in favor of the theory that pseudoleucemia is always produced by infection of the lymphatic apparatus with tubercle bacilli. J. Sailer (Phil. Med. Jour., Apr. 5, 1902), in addition to an extensive review of the literature of the subject, contributes an account of four cases of lymphatic tuberculosis that resembled pseudoleucemia and presented certain common clinical features. The author was tempted to employ the latter to differentiate during life, such cases from true pseudoleucemia (if this actually exist) and from ordinary tuberculous adenitis. Such clinical differentiation seems doubtful, however, although the following symptoms appear to be usually present in the forms which have been determined to be tuberculous at autopsy. (1) Fever, continuous, irregular or recurrent. (2) Moderate anemia, more frequently associated with leucopenia than with leucocytosis. (3) Progressive emaciation. (4) Enlargement of the spleen and frequently of the liver and superficial lymph-nodes. (5) Abdominal tenderness, especially in the right hypochondrium. (6) Hemorrhagic diathesis, epistaxis. (7) Albuminuria, anasarca and jaundice. (8) Death occurring with the eruption of miliary tubercles. It seemed possible that in these cases a variety of tubercle bacillus was present that differed from the one ordinarily infecting human beings. But this hypothesis cannot be established until in a sufficient number of cases constant cultural and pathogenic peculiarities could be observed. In only one of the author's cases were inoculation experiments made and then an actively virulent tubercle bacillus was found. Although no dogmatic statement can be made, the gradual accumulation of positive and the absence of entirely satisfactory negative evidence tends to confirm the supposition that the majority of cases of pseudoleucemia will ultimately be recognized as tuberculous in nature.

THERAPEUTICS.

Acidified Alcohol and Wounds.—Ordinary alcohol is often employed in surgery as an antiseptic. L. DeGaetano (La Sem. Méd., Mch. 12, 1902) conceived the idea of increasing its antiseptic qualities with acetic acid. This acid is very diffusible and is for this reason ordinarily employed in laboratories for the fixation of tissues in the so-called fluids of Flemming, of Zenker, etc. DeGaetano uses a compound containing 100 grams of alcohol (70 per cent.) and 20 drops of acetic acid. In addition to its power of antisepsis, this mixture presents the very great advantage of making the wound as dry as possible, which in itself makes invasion by the germs unlikely.

Ichthyol for Conjunctivitis.—This drug seems to gain in the number of conditions of inflammatory character to which it may be profitably applied. M. Popov (La Sem. Méd., Mch. 12, 1902) has used ichthyol in solutions of from 10 to 20 per cent., not only for eye-baths, but in the form of a callyrium. After having turned back the two lids and brought them in this position together again he lets a few drops of the solution fall upon them until the sensation of irritation produced by the medicine begins to extend. He then removes the excess of the fluid with a small ball of absorbent cotton. In this manner he has treated about thirty patients of whom six were afflicted with trachoma, one with granular conjunctivitis of the dry variety without catarrh, six with trachoma complicated with catarrh of the conjunctiva, and seventeen others with chronic trachoma with diffuse infiltration and hypertrophy of the conjunctival sac and mucopurulent secretion. The persons of the last category were cured in about five or six weeks, the dry conjunctivitis in a month and a half and those of the third group in two months. Finally, of the seventeen with hypertrophy, four recovered completely in four months; the thirteen others showed considerable improvement by a diminution of the secretion and in the thickness of the conjunctiva. These drops of the solution of ichthyol are as a rule well supported, cause smarting much less in degree and for a shorter time than does nitrate of silver or sulphate of copper. In one case he found an idiosyncrasy for the medicine which manifested itself by an edema.

Treatment of Epididymitis and Orchitis.—Brilliant results in the treatment of these affections are reported by A. Bocchi (Gazz. degli Osped., Mch. 16, 1902) through the daily application of the following ointment: Guaiacol, 5; vaseline, 50; supplemented by the usual measures, rest in bed, suspension, etc., and the internal administration of salol, gm. 2, or sodium salicylate, gm. 4, daily in four doses. The author's claims for the guaiacol ointment are that through its application mitigation of pain is almost instantaneous, and this symptom disappears entirely in from four to five days; resolution is effected in from twelve to thirteen days. Applications should be limited to one daily, as more frequent use induces cutaneous irritation.

Prophylaxis of Pertussis.—Though many measures for the cure of pertussis have been studied, its prophylaxis has been limited to isolation. Jenner noted the efficacy of vaccination in the prevention of the disease; other authorities have claimed for it curative power as well. Through study of the effect of vaccination during an epidemic of whooping-cough, G. POSCHI (Gazz. degli Osped., Mch. 16, 1902) concludes that vaccination is not curative in pertussis when the disease has passed the initial stage, but is so if practised during the period of incubation. Recent vaccination prevents contagion in those exposed to the disease, as proven by immunity of thirty-one infants successfully vaccinated a short time before the onset of the epidemic. Children who had been vaccinated a year previously were not immune; therefore, the author advises vaccination in the beginning of an epidemic of pertussis or immediately after exposure to the disease.

Treatment of Cholelithiasis.—There seems to be a great difference of opinion as to whether surgical interference is indicated in repeated attacks of gall-stones. J. B. MCGEE (Cleveland Med. Jour., Feb., 1902) asserts that medical treatment is so frequently successful that surgery ought not to be resorted to unless the case be very chronic in character, unrelieved by treatment, or when the stone is evidently very large and suppurative conditions arise. Morphine is necessary to control the attack at the beginning and is the best antispasmodic to use. Heat locally or mild counterirritation may aid. In regard to the tendency to recurrent attacks Naunyn believes that internal medicines are of no value, while Chauffard says with confidence that "there should be no surgical treatment." The truth, doubtless, is that some cases respond to medical treatment and they should be given that chance. The objects desired are to increase and liquefy the bile, perhaps render it aseptic, and possibly to exert an alterative action on the mucosa. The diet probably has very little influence, but the avoidance of fatty and rich foods and alcoholic liquors is to be recommended. One of the best remedies to increase the flow of bile is the free use of water and this may be advantageously combined with a little soda bicarbonate or phosphate. Olive oil is supposed by some to have an effect and its constituent oleic acid is now being recommended. The sodium salts seem to have a decided effect in aiding hepatic functions, and the benzoate, salicylate and phosphate are the forms preferred. The succinate of sodium is said to be of evident benefit. Murphy believes that jaundice, due to a catarrhal inflammation, may be readily cleared up by small doses of pilocarpine twice a day for a week or two and may thus be differentiated from jaundice due to obstruction.

Chronic Bronchitis in Children.—The beneficial results obtained from the use of ichthyol in phthisis suggested the use of the drug in chronic bronchitis, especially as it retards the disintegration of albumins and favors the absorption of exudates when taken internally. W. B. JENNINGS (St. Louis Med. and Surg. Jour., Apr., 1902) has used this drug in many cases and claims remarkable success. The following is found to be a good combination:

℞ Ichthyol .... gr. xxxij
Glycerini,
Syrup aurantii ....aa. ʒss
Aquæ ....q.s. ad ℥ij

M. et Sig.: One teaspoonful three times a day, after meals.

It is often found that the first dose nauseates, but later the child acquires a taste for ichthyol, although children under one year seldom take it well. It should be given after meals to avoid the disagreeable taste; increasing doses are not necessary for good results.

Effect of Dilution Upon Toxicity.—The law in posology that the therapeutic efficacy of a chemical substance is in proportion to the weight employed is not borne out by the experiments of B. J. STOKVIS (Deutsch. Arch. f. klin. Med., Vol. 73). According to him, the degree of dilution is of far greater importance. Thus 100 milligrams of the cardiac muscle of the frog could be killed by means of from two to three milligrams of bromide of potassium if employed in proper concentration. A much larger quantity could be brought in contact with the heart if the dilution were higher; therefore, it would be wrong to pronounce two or three milligrams the lethal dose.

Treatment of Erysipelas.—The treatment of erysipelas as conducted by H. KRUKENBERG (Münch. med. Woch., Apr. 7, 1902) by allowing the patients to come in contact with red light only has given very gratifying results. The average duration of the fever was only two days, general symptoms were absent or only very slight and after twelve hours the sharp edge was lost and only a slight reddening and edema remained. The curative action was not due to the red light itself, but to the exclusion of certain rays which favor the advance of the inflammation. It is thought that certain drugs, such as ichthyol, which is known to have a favorable action in erysipelas, cure by preventing these rays from reaching the skin. For this reason, negroes are to a certain degree immune.

Ichthargan in Gonorrhea.—It is a fact which has now received very general recognition that acute gonorrhea, or rather the acute stage of a gonorrheal attack, is a condition well within the control of the practitioner. If he treat it steadily by one of the modern methods of irrigation, he need not fear that it will not gradually but surely subside. The effort to expedite recovery, to minimize suffering, and to lessen the danger of complications, has led to the trial of many new remedies, most of which are as willingly discarded. Ichthargan, according to TAENZER of Bremen (Monatshefte f. prakt. Dermat., Apr. 1, 1902), is a drug which has come to stay. In one case, he had tried Janet irrigations daily for two weeks without avail, while after three irrigations with ichthargan the urine cleared up completely. His general method in the treatment of gonorrhea is at present as follows: With fresh infections he is accustomed to put the patient upon the usual dietary and hygienic regulations, and to prescribe internally only ichthargan, in a solution of 5 centigrams to 200 cubic centimeters of water, of which a dessertspoonful is taken every three hours. The urine becomes clear within from eight to ten days, even in the most severe forms of the disease, and the use of the drug in irrigations is now begun. A one-per-cent. solution is injected daily into the anterior urethra. In chronic gonorrhea he makes use of the same preparation.

Spartein.—It is not, perhaps, sufficiently recognized that there are a number of drugs which compare favorably, even if they do not equal, the action of digitalis in heart disease. Of these drugs spartein has been especially studied by the French therapeutists, most recently by THOMAS (Rev. Méd. de la Suisse Rom., Mch., 1902). He has experimented very largely with the drug in the chronic affections of the heart. He finds that it is a reliable diuretic, although it does not as a rule stimulate to the secretion of more than three liters of urine daily. It is thus inferior to theobromine, although frequently more potent than digitalis. In its action upon the heart it closely resembles digitalis, although it is a much weaker drug. It does not act rapidly. Its cumulative and toxic effects are slight. The principal indications for its use are chronic myocarditis, commencing asystole, subjective cardiac disturbances, and arrhythmia. For advanced cases, and for cases complicated by extensive hepatic and pulmonary changes, the more powerful drug, digitalis, is preferable. The dose should not exceed one-third of a grain in twenty-four hours by mouth, or one-tenth of a grain hypodermically, twice repeated.

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No. 111 FIFTH AVENUE, NEW YORK.

Subscription Price, including postage in U. S. and Canada

PER ANNUM IN ADVANCE	$4.00
SINGLE COPIES	.10
WITH THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, PER ANNUM . . .	8.00

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LEA BROTHERS & CO.,
No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK.

SATURDAY, MAY 17, 1902.

WHAT IS THE BEST PATH TO THE KIDNEY?

ON the second of August, eighteen hundred and sixty-nine, Gustav Simon, of Heidelberg, performed the first nephrectomy; it is therefore thirty-three years since scientific surgical work was begun on the kidney. During this time a great number of very knotty problems have been unraveled, and, particularly in the past decade, very many important decisions touching on the technic of various kidney operations have been reached and probably settled for all time.

It seems, on first thought, very strange that no definite conclusion has as yet been grasped as to the best path by which to approach the organ. Many men are in concert as to what to do when once the kidney lies before them, but there still exist the profoundest confusion and the greatest variety of opinion as to where the primary incision should be made; it has been the most difficult of renal problems. Shall the attack be made from in front or from behind, or shall we, as Mayo-Robson and Abbe have done, compromise by entering at the side? An answer to such questions is to be found only in a comparative study of the statistics of renal surgery which have now gathered in a vast, but unhappily somewhat incongruous mass.

That there are many advantages to the abdominal route is amply vouchsafed by the mere fact that such masters as Trendelenburg and Thornton have for years used and praised it. It is an admirable exemplification of the surgical mandate not to work in the dark—by it we are able to explore the whole abdomen, particularly the pancreas and the far-wandering biliary mechanism; more important than all else, it places us cheek by jowl to the other kidney. In the hands of its advocates it gives good results, but a close study of the cause of death in a long series of nephrectomies leads one very surely to the conclusion that such results are to be obtained only by those whose hands are well practised in its most difficult technic. From shock, for example, more than twice as many die in the course of recovery from the abdominal operation as from the lumbar. From hemorrhage in either case the mortality is small, but five times as many succumb to it after the anterior operation as after the posterior. The condemning web is much more tightly woven when we seek to balance between these two routes on the basis of peritoneal infection. That the ratio here is actually *eighteen* deaths to *one* seems almost incredible! When, with the new modes of examining the other kidney, ureteral drainage, urinary segregation and the like, at hand; when Schede and others report many successful exploratory incisions on the well side, is it not evidence enough?

For the general surgeon who does a nephrectomy but rarely, the question is already answered; he shall apply to the supposed sound organ the tests which the last ten years have placed in his hands; he shall, these failing to convince him, make a lumbar incision on the well side and, if necessary, do nephrotomy. All peradventure thus cleared away, he excises the diseased organ through König's posterior incision, removing the twelfth rib if necessary, and does his best to avoid injuring the pleura and peritoneum. The statistics of thirty years show this to be the course for the man who is not a renal expert. Are others justified in ignoring them?

THE DIAGNOSIS OF SMALLPOX.

CONSIDERING the ease with which it is generally considered that a case of smallpox can be recognized, it is distinctly surprising to find a set of experts in the disease agreeing, as they did at a recent meeting of the New York Academy of Medicine (see MEDICAL NEWS, page 955), that smallpox has no single pathognomonic sign by which it can be recognized and that certain cases baffle the most expert diagnosis until a fatal termination (in the fulminant types) or a thorough development of the eruption makes the picture complete. It is evident that the faithful work of diagnosticians in this country during the present epidemic which has been of generally mild character will do much to revolutionize the differential diagnosis of the disease that has found a place in most text-books for many years. Medical text-books are not infrequently conservatories —museums some one has called them—of long since exploded notions, and the chapters on the diagnosis of smallpox have as a rule been glaring examples of the lack of modernity.

Practically all the text-books on medicine, until very recent years, have insisted on the occurrence of multiform lesions over the same area of the body as pathognomonic of varicella in contradistinction to variola. This symptom alone has been considered sufficient to settle the diagnosis and is often found stated as an absolute differential principle. Cases of mixed lesions are rare in smallpox, but they may occur. Variola patients have been seen with papules, vesicles, pustules and even crusts simultaneously present on a limited portion of the body. The superficiality of the lesions does not constitute a pathognomonic sign any more than does the presence or absence of mixed lesions. Varicella lesions are practically always superficial, those of variola deep, but in exceptional cases just the opposite may be true and the lesions, for instance, of a case of mild, discrete smallpox may consist of clear superficial vesicles with perfectly transparent contents. When such a case occurs as the first in an epidemic in a particular locality, and first cases are often very light, especially if occurring in persons partially protected by an old vaccination; it is then practically impossible to be sure of the nature of the disease until the occurrence of further typical cases reveals the mystery.

The lesions on the palms and soles so frequent in smallpox, unfortunately for assurance of diagnosis, occasionally occur in varicella. They may be present (though rarely) in pustular syphilide. This affection is really one of the most difficult of differentiation, especially if seen during a smallpox epidemic and under suspicious circumstances. The fever, as well as the rash, may be present and an intense tired feeling that is almost an ache may simulate the pains in the back so characteristic of the prodromal stage of smallpox. As a matter of fact, while typical cases of smallpox are exceedingly easy of recognition under favorable circumstances, atypical cases make the most serious diagnostic problem in all medical practice.

The economic question involved in smallpox demands an instantaneity of decision in these cases that still further complicates the position of the diagnostician. Often only a careful survey of all the symptoms will suffice to justify a diagnosis and even then all possibility of error is not removed. Our diagnostic experts are to be congratulated on the fact that so few mistakes are made under the trying circumstances.

For economic reasons and public health it would be eminently desirable if smallpox could be recognized readily during its prodromal stage. There is in a certain number of cases an erythematous rash that precedes the ordinary smallpox rash, by from twenty-four to thirty-six hours. This not infrequently leads to the suspicion or even the positive error in diagnosis of scarlet fever. The differential sign, although even this is not absolute, since sore throat sometimes occurs as a premonitary symptom of smallpox, is the characteristic scarlatinal angina. The erythema of smallpox is always noted first in the groins and axillæ; that of scarlet fever occurs on exposed portions of the body, especially on the face. It would be rashness to attempt to diagnose smallpox at this stage in spite of the desirability of the early isolation that it would afford. That our American experts are recognizing the disease early and consequently protecting others from exposure to it, is evident from the fact that Dr. Hubbard was able to exhibit at the Academy meeting a photograph of a patient in the macular stage of smallpox—one of the first of its kind that has ever been made.

In many cases there are very few symptoms of the stage of invasion of the disease. The first symptom of the ailment may be the eruption seen not in the macular, but in the vesicular stage. It is in this class of cases particularly that the stage of incubation is apt to be prolonged beyond the normal. While the usual incubation period is considered to be from twelve to fourteen days, a period of sixteen days of incubation is not rare and exposed persons should be kept under observation for at least twenty days. The incubation is prone to be longer in those ineffectively protected by vaccination, as, for instance, by a vaccination from twelve to fifteen years old. Cases like these particularly encourage the practice of vaccinating all exposed persons, for the vaccination, if successful, will run a shorter course than the smallpox and so anticipate its infective power by an immunity. Several days after exposure, from even three to five, is not too long an interval to preclude all hope of vaccinal protection. In the previously vaccinated especially vaccinia runs a shorter course and exerts its immunizing power sooner. The presence or absence of a recent vaccination scar is accepted by all the experts as a significant sign of the character of the disease under suspicion in the doubtful cases.

These are the men who see most smallpox and whose opinion is therefore worth most. Physicians protected by vaccination have no fear of smallpox and the results justify their confidence. While our present lack of absolute diagnostic differentiation early in smallpox necessarily leads to exposure of many to the disease, it is the simple duty of all to take advantage of the assured protection vaccination affords.

SANITARY NEEDS OF MARTINIQUE.

THE special article printed elsewhere in this issue on the sanitary needs of Martinique, by Dr. George A. Soper, the sanitary expert, sounds a timely note of warning concerning the possibility of epidemic at Martinique.

The density of population in Martinique and the neighboring islands is greater than that of any state in the Union excepting Rhode Island. Under the best circumstances this part of the world has a bad reputation for health. Martinique itself has frequently been visited by epidemics of yellow fever, and is thought by some to be a focus or original seat of this disease. At ordinary times dysentery is by no means uncommon, and is capable of assuming an epidemic form; malarial fevers constitute one of the chief causes of mortality among the people; and there is a large number of infectious and contagious diseases to which the people are liable. At the present moment when the more salubrious portions of the island have been evacuated and there is a congestion of refugees in and about the unhealthful city of Fort-de-France, such conditions as make for health must be very seriously impaired.

The terrible experiences through which the inhabitants of Martinique have recently passed and are still passing render them peculiarly liable to disease. The history of epidemics shows that great mental distress and the depressing devitalizing effects of improper or inadequate nutrition have ever been the most prominent predisposing factors to pestilence. The insanitary habits of the people, the near presence of infectious diseases, and the approach of the unhealthy season do not tend to lessen the weight of these factors in the case of Martinique.

Under the present circumstances, it would surprise no one if a general epidemic of yellow fever, for example, should make its appearance, while the chances are large that local outbreaks of dysentery, typhoid fever and allied intestinal diseases will appear. In its epidemiological character, Martinique bears resemblance to a tinderbox. It is easier to prevent a conflagration than to arrest one. No wiser preventive measure could be taken than to transport part of the population to the neighboring islands if this were practicable.

In the relief measures which are being rushed to the front, the first essential is, of course, food. There is every reason to be satisfied with the steps that have been taken to supply this want. The refugees who have been able to subsist until this time are not likely to starve.

It is scarcely less important that the necessities and resources of hygiene should be recognized promptly. There is need at Martinique of an organization to initiate a campaign of sanitation and bring into effect every facility which can be made available for protecting the health of the refugees. It is to be expected that the French authorities will initiate these measures, but nothing should be taken for granted. The American people can do much to encourage the work, and can put into the hands of the authorities valuable means for the furtherance of their efforts. Forethought should be used at home in the selection of provisions and supplies in order that the more staple and familiar stores and disinfectants shall be forwarded, and those who will be charged with distributing this succor at Martinique should be instructed to render such cooperation and aid in sanitary lines as lie in their power.

Fortunately, a great deal can be done to improve the conditions of living among the people by those who have some knowledge of the principles of hygiene which apply in such cases. To those who desire such information and are interested in the medical sanitary aspect of the situation at Martinique, Dr. Soper's article will be of much value.

THE AMBULANCE SURGEON AND THE PUBLIC.

THERE are from time to time cases in our "yellow journals" of what they see fit to call examples of incompetency, ignorance and neglect on the part of the ambulance surgeon. It is perfectly true that such criticisms are written for sensation only, almost invariably without any inquiry whatever of the hospital authorities as to the merits of the case or as to the hospital side in general, and necessarily without exception in the absence of any knowledge on the part of the reporter as to the insurmountable medical difficulties which surround the duties of ambulance work at all times. With that strange facility by which every one accepts as probably true most of the statements which appear in newspapers, the public are rather apt to look upon ambulances more as a curse than as a blessing.

It is expecting too much to endeavor to educate the reporters, the papers and the public to anything like a realizing sense of the difficulties under which that public servant, the ambulance surgeon, usually labors, and to teach them to appreciate the fact that his diagnosis or opinion is given without the advantage of a thorough physical examination, which cannot possibly be made on the spot, and is stated purely for the purpose of satisfying the demands of police regulations, which require that a medical opinion shall be uttered for the matter of formal record only.

Time alone will alter the abuse to which this faithful public servant is subjected but there are a few points concerning his conduct which are not medical in their character, but important in their influence upon the impression he gives the public.

It is too often a sight of our streets that an ambulance is noted passing along in which the doctor sits with one or both feet over the tailboard, with a cigar, cigarette or pipe dangling from one corner of his mouth, with his cap pushed to the back or side of his head, or sometimes not on his head at all, and occasionally in summer he appears without a coat, or else in the act of putting one on as the ambulance drives along. Criticism of such conduct by lookers on need hardly be repeated here. There is no excuse whatsoever for it, and the ambulance surgeon has no more right to appear in the public service with such mannerisms than would a private physician driving about in his cab. The public ambulance surgeon should be governed by a quiet, reassuring dignity such as is the usual practice of our best physicians and surgeons, and it is certain that if the young men would take this view of it many so-called errors of diagnosis would be overlooked in the papers in virtue of that proper, professional consideration for public good taste and the patient's feelings. These rights he would then at least appear to exercise.

Recently in lecturing to a class of students, a professor stated that good taste, good manners and patient consideration will carry a man further along in the practice of medicine than will mere technical knowledge of medical matters without them. We can apply the same principle to the office of ambulance surgeon, and would urge upon those who in a few weeks will go on duty in this capacity in all our large hospitals that the policy of personal self-respect and quiet dignity will be of the highest value and probably prevent a great number of unfavorable, and it may be unjust, adverse criticisms.

ECHOES AND NEWS.

NEW YORK.

Post-Graduate Medical School.—At a meeting of the Board of Directors of the New York Post-Graduate Medical School and Hospital, held May 5, 1902, the following appointments were made in the Faculty: Carl Beck, M.D., Professor of Surgery; Henry Ling Taylor, M.D., Professor of Orthopedic Surgery; Simon Baruch, M.D., Professor of Hydrotherapeutics; Grace Peckham Murray, M.D., Adjunct Professor of Diseases of Women; John B. Rae, M.D., Adjunct Professor of Diseases of the Ear.

New Police Surgeons.—Police Commissioner Partridge has appointed as police surgeons Dr. Frank R. Oastler and Dr. Charles A. Elsberg. Their names appeared in first and second place on the eligible list prepared by the Municipal Civil Service Commission. Dr. Oastler, whose examination was marked 99.20, was graduated in 1891 from Yale and in 1894 from the College of Physicians and Surgeons. Dr. Elsberg is a graduate of the College of the City of New York and the College of Physicians and Surgeons. The salary of a police surgeon is $2,500 and he is entitled to pension.

Richmond's New Health Officer in Office.—Dr. John T. Sprague, who has just been appointed assistant sanitary superintendent of the Borough of Richmond, to succeed the late Dr. Theodore Welser, assumed his new duties last week. Dr. Sprague is a staff physician of the S. P. Smith Infirmary. Prior to the consolidation he was health officer of the Board of Health of Edgewater, and afterward was attached to the Health Board of the borough.

Meeting of American Therapeutic Society.—The third annual meeting of this Society was held last week in New York City and its program was one of exceptional interest. A number of the papers there read will be published in the MEDICAL NEWS.

An Omission.—In our abstract of Dr. Herter's paper on Adrenalin in last week's MEDICAL NEWS, the fact that the work was largely aided by an appropriation from the Rockefeller Institute Research Fund was omitted.

Smallpox in Asylum.—The Long Island State Hospital for the Insane at Kings Park is under smallpox quarantine. More than a week ago several patients in the big building, in which Ward 12 is situated, were stricken, and the superintendent, Dr. C. M. Dewing, took measures to prevent its spread. It did spread, however, and there is said to be an epidemic among the 2,000 patients.

New York Academy of Medicine.—The following have been recommended to resident fellowship: Drs. R. C. Eddy, F. C. Hollister and I. O. Tracy; to non-resident fellowship, Drs. W. F. Campbell, C. O. Maisch and W. P. Spratling.

The Section on Ophthalmology will meet Monday, May 19th. Drs. G. H. Cocks, C. J. Kipp and J. Wolff will present cases.

The Section on General Medicine will meet Tuesday, May 20th, and a symposium on Summer Climates and Climatotherapy will be given. The Climate and Health Resorts of Maine by Dr. Guy Hinsdale, Ocean Climatotherapy in Summer by Dr. Holbrook Curtis, Summer Climatic Treatment of Bronchial Asthma by Dr. Beverley Robinson, Summer Climatic Treatment of Neurasthenia by Dr. E. D. Fisher, Mineral Spring Resorts by Dr. J. K. Crook. Discussion will be held by Drs. J. W. Brannan, L. F. Bishop, S. Baruch, A. H. Smith, W. H. Thomson and others.

The Section on Obstetrics and Gynecology will meet Thursday, May 22d. Dr. Garrigues will show specimens of Endothelioma of Ovary. Dr. J. Riddle Goffe will read a paper on Etiology, Pathology and Palliative Treatment of Retroflexion of the Uterus; Dr. Leroy Broun, on Alexander's Operation; Dr. Brooks H. Wells on Abdominal Operations, and Dr. H. N. Vineberg on Vaginal Operations for Retroflexions.

An Imposter.—The profession is warned against a young man, heavily built, tall, a good talker, who professes to be an agent for "Collier's Weekly," and who solicits subscriptions to this periodical, offering a three-volume history as a premium. The manager of this weekly has declared this man to be an imposter.

PHILADELPHIA.

Smallpox in Pennsylvania.—The Columbia Board of Health has asked Governor Stone to direct the Secretary of the State Board of Health to visit that place and investigate an epidemic of smallpox.—At South Bethlehem all the physicians refused to undertake the care of a boy suffering from smallpox, although a compensation of $10 per day was offered. One physician offered to take the case at $40 per day if the borough furnished him a house, meals, clothing, and medical supplies. The President of the Board of Health finally took the case at $10 per day.

Free Hospital for Poor Consumptives.—The fourth annual report of this organization shows that during the past year 238 patients were cared for in various hospitals. In addition to these 69 patients were cared for at the White Haven Sanatorium. The average gain in weight of these patients was thirteen pounds. The total receipts for the year were $21,711.30; expenditures, $21,045.91.

Medical Research.—The daily "Ledger," in a recent editorial on the above subject, calls attention to the work of the Pathological Department of the University of Pennsylvania and emphasizes its value to the profession and to this city. Dr. Pepper's foundation, the Pepper Laboratory, is characterized as perhaps his best gift to the institution over which he so successfully presided. The proposed new medical laboratories are pronounced worthy of prompt and generous contributions, as "every hospital and medical school must now have its own laboratories, and here in Philadelphia our hospitals and medical schools have done the best they could with their limited means. Philadelphia can only hold its old place as a leader in medical instruction by giving to the University the means for a complete equipment of laboratories for medical research." The foregoing is quoted to show the sentiment, extending even to the lay press, regarding future advances in medicine in this city. Laboratories are the great centers of interest. In this connection should be mentioned the new laboratory building of the Medico-Chirurgical College which was opened May 1st with appropriate exercises. The chemical laboratory is stated to be one of the finest in the United States.

Federation of Jewish Charities.—The first annual meeting of the Federation of Jewish Charities of Philadelphia shows the most gratifying success of the new plan. The Federation embraces nine institutions—hospitals, asylums, societies—in Philadelphia, and three outside of the city to which contributions are made. The contributions were more than $26,000 in excess of any previous year, this being pointed to as an emphatic endorsement of the practicability of the Federation.

Jefferson Medical College.—Dr. M. H. Bochroch has been appointed demonstrator of nervous diseases, Dr. Alfred Gordon, instructor in nervous diseases, and Dr. William Pickett, instructor in insanity.

Acute Dilatation of the Stomach.—At the meeting of the Pathological Society, held May 8th, Dr. W. M. L. Coplin read a paper on Acute Dilatation of the Stomach, with special reference to changes in the elastic tissue found in that condition. After reviewing the literature of the subject Dr. Coplin gave the histologic findings in four cases that came under his observation. The cellular elements in the muscularis mucosæ showed considerable fragmentation, a tendency toward dissociation with swelling of the intercellular elastica. The mucosa in his cases showed different degrees of catarrhal change and in all instances an associated cloudy swelling. The muscular layers of the organ were, in each instance, more or less altered in a manner similar to the change mentioned as occurring in the muscularis mucosæ. The degree of alteration varied in different cases; in all cases, however, there was an irregular kinking in some of the layers that the writer of the paper attributed to loss of contractility in the kinked cells with retention of contractile power in other elements, which, by contraction produced the conspicuous change in the kinked cells to which reference has already been made. Other changes in the elastica were noted.

Commission Investigating the Treatment of the Insane in Pennsylvania.—Some interesting points were brought out at the recent meeting in this city of a commission of the Legislature appointed to enquire into "the condition of the insane in State institutions and as to the policy and effect of the present practice of removing them to the different county institutions." Most of the officials and directors of the hospitals for the insane throughout the State were represented at the session. Information was sought as to the expenses of boarding patients in the different county institutions and the precautions observed against fire and contagious diseases. Respecting the value of treatment of insane patients in a few large hospitals or in a number of smaller ones, Dr. Mayberry, of the Luzerne County Hospital, expressed decided opinions. He is opposed to the centralization system as advocated by Dr. Wise, formerly of the New York Lunacy Commission. He suggests that "there should be a number of smaller hospitals for the treatment of acute curable cases which have not become chronic. I have never yet seen any good resulting from contact of curable cases with the chronic insane. I have seen cases which I believed curable made chronic by contact with the chronic insane." Epileptic patients might be segregated with advantage. Dr. Mayberry said that the scarcity of well-trained male nurses was a great obstacle in the treatment of the insane. Young men who are fitted by temperament and training for such positions are not paid salaries sufficiently high to induce them to adopt such a calling. In reply to a question Dr. Mayberry said that he saw no objection to having hospitals of a capacity of 2,000 to 3,000 for the treatment of the chronic insane. Superintendent Geary, of the Philadelphia Almshouse, stated that there were 1,444 patients in the insane department, the normal capacity of which is between 900 and 1,000. There is no separate building for epileptics, of whom there are 70 men and 65 women. A significant point in this testimony was that regarding the question of heredity. Superintendent Geary said, "Sixty per cent. of the inmates of the West Philadelphia institution are tainted with insane blood. Ten per cent. of the cases are traceable to alcohol, leaving thirty per cent. to all other causes. This matter, I think, calls for legislative action and the enactment of a more rigid marriage law."

Obituary.—Dr. Thomas F. Riegel, one of the resident physicians at St. Joseph's Hospital, died in that institution on May 7th of typhoid fever. Dr. Riegel, who was twenty-two years of age and a native of this city, was a graduate of Jefferson College, 1901.

Dr. Ida E. Richardson, the gynecologist and one of the best-known and most highly-esteemed women physicians in this city, died on May 9th, at her home, as the remote result of an operation undergone in February. Dr. Richardson was born in this city in 1845 and graduated from the Woman's Medical College in 1879. Her practice was limited wholly to diseases of women and children, she declining to treat men. She was for a time instructor in practice at the Woman's Medical College and was one of the founders of the West Philadelphia Hospital for Women. Dr. Richardson, in addition to her professional ability, was especially noted for her womanly qualities and Christian character.

CHICAGO.

Recommendations by the Officers of the Day at the County Hospital.—Only four recommendations have been made or added to those heretofore mentioned in the MEDICAL NEWS as emanating from the officers of the day at the County Hospital. These are: (1) That a bulletin board be established for announcing unusual and interesting cases treated by internes, that other internes might discuss the cases and criticize the treatment; (2) that a wardrobe be established to provide clothing for needy persons dismissed from the hospital; (3) that the City establish an especially-constructed hospital for contagious diseases, which can be so operated as to pay expenses; (4) that recommendation 3 be carried out.

The Fitting of Spectacles Not Construed as the Practice of Medicine.—The Appellate Court of the Second District of Illinois, in the case of Smith *versus* the People, has decided that an itinerant oculist and spectacle fitter is not engaged in the practice of medicine. The appellant advertised as the "Great Chicago Eye Expert," and his advertisements also contained the following: "If you have blurring, dizziness, neuralgia, headaches, spots before the eyes, inflammation, granulation, winking, trembling spells, cataract, burning and smarting of the eyes, various brain affections entailing not only positive injury to the sight, but untold misery, call immediately." The Court reasons that this is not the practice of medicine. "The defendant did not cure any of these ailments; whenever his patrons ceased using the glasses defendant had supplied to them, their prior troubles returned." The case has been carried to the Supreme Court.

New Building for Dunning.—The County Board decided May 3d to construct a building for general purposes at Dunning to cost $20,000. It is said, the building will accommodate 100 patients.

Illinois State Medical Society.—At the forthcoming meeting of this Society, to be held at Quincy, May 20, 21 and 22, 1902, Dr. Roswell Park, of Buffalo, will deliver an address on surgery, and Dr. Geo. Dock, of Ann Arbor, Mich., an address on medicine. Approximately 75 papers will be read before the three sections of this Society.

A Dowieite Seeks Vaccine.—We have been reliably informed that Dr. Spelcher, a Dowieite elder, called on the Health Department for protection from a case of smallpox on the South Side, near a colony of Dowieites. The object lesson of smallpox in Zion has apparently had a salutary effect on the antivaccinationists of the Dowie cult.

Memorial Institute for Infectious Diseases.—The work of treating acute infectious diseases has been commenced by making a temporary arrangement with the Presbyterian Hospital. The institute was incorporated January 2, 1902, and its sole object is the scientific study and treatment of scarlet fever and other infectious and contagious diseases. At present the institute derives support entirely from funds generously provided by Mr. and Mrs. Harold F. McCormick. The Board of Trustees consists of Dr. Frank Billings, Mr. Charles L. Hutchinson, Mr. Stanley R. McCormick, and Dr. Ludwig Hektoen. In order that the institute might begin its important work as promptly as possible, a temporary arrangement was made with the Presbyterian Hospital whereby the institute secured absolute control of a small number of beds in properly-equipped and isolated houses for the exclusive care of scarlet fever patients. In the admission no discrimination is made between those able and those not able to pay. Owing to the prevalence of scarlet fever in the city, the capacity of the institute has been taxed to the utmost almost from the beginning, some 35 patients having been admitted since February 1st. It is the full intention of the founders of this institute to secure its enlargement, so that it may be better able to meet the urgent necessity in this city of increased hospital facilities for scarlet fever, diphtheria, and other diseases of similar nature and of like importance to the community. This great need would be best met by the establishment upon a spacious piece of ground of a large institution with separate pavilions for the proper isolation of the various contagious diseases, each one of which may be dangerous for patients suffering from any one of the other diseases of this group. Here is an excellent opportunity for wealthy benefactors to join hands in carrying the good work already begun to adequate completion. The idea of endowments of separate pavilions at once suggests itself. If ever the municipality should decide to do more than it has done or is doing for the care and prevention of contagious diseases, there is apparently no good reason why municipal efforts should not unite with individual munificence and enterprise in establishing an institution of a size and character commensurate with the needs of a great city. However, the contingency of any municipal undertaking in this line seems so remote at the present time that all hope for relief and aid naturally turns to philanthropists.

Carcinoma of the Larynx.—Dr. Arthur Dean Bevan exhibited three cases of carcinoma of the larynx before a recent meeting of the Chicago Surgical Society. In the first case the disease had existed for a number of months, and it was not thought justifiable to resort to radical operative measures. The carcinoma had gradually extended from the larynx to the esophagus, so that a tracheotomy was done to relieve the dyspnea. The patient had worn a tracheotomy tube for a number of months. The patient could not swallow, so that it was necessary to resort to rectal feeding. The case was an example of the work which had been done in the past, certainly up to the time of the celebrated case of the German Emperor. The second case was that of a patient upon whom the late Dr. Fenger did a complete laryngectomy; the patient recovered. He thought surgeons had recently improved upon the method adopted by Fenger in this case. In the Fenger case a preliminary tracheotomy was done and later the larynx was completely removed. The patient has since worn a tracheotomy tube. He was very much improved by the operation and was in a condition to wear an artificial larynx. The third case was one in which he did a complete laryngectomy after the manner suggested by Keen, which operation had been carried out practically with some modifications by Kocher in a considerable number of cases.

Perforation of the Bowel in Typhoid Fever.—Dr. G. E. Armstrong, of Montreal, Canada, read a paper with this title, by invitation. He said that during the past six years there had been treated in the Montreal General Hospital 932 cases of typhoid fever. Perforation of the ileum had occurred in 34 cases, or 32.3 per cent. In one case of a most malignant type, with tympanites, dulled sensorium and profound toxemia, the perforation was first recognized at the autopsy. In 33 cases the perforation was recognized during life and the opening closed. Five of these recovered. In one other case the patient died five days after operation, and the pathologist reported that death was due to the typhoid toxemia and not to the perforation. If that case be included, there were six recoveries in 33 cases, or 18.18 per cent. As to sex, there were 21 males, and 9 females. In three cases the sex was not stated. Of those that recovered 3 were males and 3 were females. The number of females in the recovery list was striking. There were 21 males operated upon, and 3, or 14¼ per cent., recovered, and of 9 females, 3, or 33⅓ per cent., recovered.

Leucocytosis.—He had not found the presence or absence of leucocytosis a guide to be depended upon. In one case it increased 50 per cent. in the first two hours after perforation. In another case it was only 4,600 eight hours after the occurrence of symptoms of perforation. In one case it increased from 4,000 to 10,000 in six hours. He then made an exploratory incision and found no perforation, but an apparently acute infection of the mesenteric glands. The patient made a good recovery. In another case it was only 4,000 eleven hours after perforation; two hours later the perforation was closed by operation; the patient recovered. It was a symptom to be carefully observed and considered in association with the presence or absence of other symptoms, but upon which alone no great reliance could be placed.

Operation.—In the Montreal cases the operation was performed during the first twelve hours in 10 cases, with 4 recoveries, or 40 per cent.; second twelve hours in 10 cases, 1 recovery, or 10 per cent. Of the 20 cases operated upon during the first twenty-four hours, 5 recovered, or 25 per cent. During the third twelve hours, in 3 cases, and they all died. In one case forty-eight hours after perforation, died; in one case sixty-eight hours after perforation, died; in one case seven days after perforation, recovered; in seven cases, time after perforation uncertain. Of the 6 recoveries, one was operated on two hours after the perforation, one thirteen hours after, one eight hours, one ten hours, one five hours, and one seven days after. The operation in the last case was really nothing more than the opening of an intra-abdominal abscess. Four of the five, acute cases were operated on during the first twelve hours. So far as his experience goes, it indicates early interference.

Concerning a New Series of Synthetic Salts; the Nucleids of Iron, Copper, Mercury and Silver.—Dr. E. R. Larned read a paper on this subject before a meeting of the Chicago Medical Society, held May 7th. He drew the following deductions: (1) These new salts of nucleinic acid are rational reconstructives; they are pure tonics; they increase physiological resistance; they increase the functional activity of secretory organs. (2) They are powerful germicides, not harmful, but beneficial to the tissues. (3) If the present knowledge of nucleins and leucocytosis be correct, then the nucleid is the proper form for administration of metals. (4) One does not positively know the rationale of their action, but there is nothing which holds out such prospects for successful medication. (5) These new synthetic salts are valuable additions to the Pharmacopœia.

GENERAL.

Charlatanism in Berlin.—From a recent police report the following interesting figures are gathered: The results of the census of irregular medical practitioners show the presence in that city of 476 "healers," or in the proportion of 1 to 4.6 of licensed physicians. The increase in the population since 1879 has been 61 per cent.; the increase of doctors, 102 per cent., of charlatans, 1567 per cent. The male offenders are recruited from the ranks of servants, mechanics and clerks; the females were usually house-servants, only a few having been trained nurses.

Foreign Physicians in London.—In a total of 175 foreign physicians practising at present in London, 63 are American. The six doctors of the feminine persuasion are natives of Russia, Sweden (3), Germany, and Italy.

New Boston Hospitals.—The first active step toward the expenditure of the fortune which Peter Bent Brigham accumulated in Boston years ago, in running a concert hall and in various other investments and which he left in trust for the maintenance of a hospital, was taken last week by the formation of a corporation under the name of the Peter Bent Brigham Hospital Corporation. The trust, which was established twenty-five years ago, will end on May 25th. The net amount available for the purpose is said to be $4,000,000.

Medical Society State of West Virginia.—The thirty-fourth annual meeting of this Society will meet at Parkersburg, May 21, 22, 23, 1902. The program announced is one of exceptional interest.

American Medical Editors' Association.—The annual meeting of this Association representing in its membership the leading medical journalists of the country will convene in the Y. M. C. A. Bldg., Saratoga Springs, N. Y., June 9th and 10th. The preliminary program includes a number of valuable papers, and gives assurance that the meeting will be a most successful and interesting one. An important feature will be a symposium presenting various features of editorial and business management of medical journals. The annual dinner of the Association will be given at the Hotel Kensington on the evening of June 9th. The officers of this Association are Dr. Alexander J. Stone of St. Paul, President, and Dr. O. F. Ball of St. Louis, Secretary, to whom all correspondence should be directed.

Obituary.—Dr. William Houston Boderhamer died of apoplexy late Saturday night at his home in New Rochelle, N. Y. He was a son of Dr. William Boderhamer and was born in Paris, Ky., where he practised successfully for twenty-five years. He was sixty-two years old.

Dr. John G. Elliot, assistant physician at the Hudson River State Hospital, died suddenly of heart disease on Monday, May 12th. He was thirty-one years old, was born in England, and came to this country in 1896 and was graduated from the Buffalo Medical University.

Dr. Marie E. Zakrzewska, the pioneer woman physician of Boston and one of the pioneers in America, and the founder of the New England Home for Women and Children, is dead. She was born in Berlin in 1829. Her great desire to study in her chosen profession, which the law forbade her to do at home, led her to come to America in 1853. She took the degree of M.D. from Western Reserve Medical School in 1856. Drs. Elizabeth and Emily Blackwell, of this city, were among her early associates.

SPECIAL ARTICLE.

THE SANITARY NEEDS OF MARTINIQUE.

BY GEORGE A. SOPER, PH.D.,

OF NEW YORK.

ALTHOUGH it is generally known that certain portions of the West Indies support a large population, few people appreciate how closely the inhabitants of Martinique are gathered together.

According to the last edition of the Statesmen's Year-Book, the population of Martinique before the recent calamity consisted of 189,599 souls. Of this number 4,665 were West Indians, 5,371 Africans, 1,307 French, and 432 Chinese. The chief town, St. Pierre, had 25,792 inhabitants and Fort de France, 17,274. The total population occupied an area of 381 square miles, representing nearly 500 persons to the square mile.

Within a radius of 125 miles of Martinique there reside in the islands of the Windward and Leeward groups 675,000 people. The density of the population over the larger area is 357 people to the square mile. This is a greater density than that of Massachusetts, or, in fact, of any State in the Union except Rhode Island.

If we reckon that 40,000 people were killed in Martinique by the eruption of Mount Pelee, we find that there are left 150,000 survivors on the island. If the eruption of La Soufrière at St. Vincent destroyed 2,000 more, which seems to be a fair inference from the information at hand, there will be left something like 39,000 people there.

How far destruction has visited other islands in the neighborhood, or to what extent the 189,000 estimated survivors of Martinique and St. Vincent are to be classed as refugees, it is impossible at this time to say. From the knowledge at hand we seem justified in believing that the consequence of the cateclysm of May 8th has not been exaggerated. Indeed, it is not improbable that the volcanic disturbances have interfered more or less seriously with the vocations and habits of living of far more people than our imperfect conceptions of those distant lands would lead us to suppose; so that the number for whom intelligent and organized aid will need to be provided will tax even the magnificent charity which kings and nations now seem vying with each other to extend. It is important that the philanthropic movements now on foot should be organized and administered in a judicious and discriminating manner, if the object for which they are intended is not, in some degrees at least, to be defeated.

It is with the object of indicating some of the principal bearings of a phase of the relief work which perhaps above all others is most in need of intelligent and energetic administration that the following remarks are made. The situation calls for the greatest promptness. Whatever is to be done effectively must be done at once.

The conditions which will call for most urgent attention will be those which always follow a great catastrophe where a large population, suddenly experiences a great mental shock and looses at the same time all means of subsistence. We have seen examples of such calamities in the United States. Instances have been afforded by the floods of the Mississippi, notably in 1874 and in 1888, the disaster at Johnstown, Pa., in 1889, the Sea Island hurricane, the Galveston calamity, and the great fires which have devastated some of our cities.

After the first shock which the news of such disasters produces, the world is generally appalled by the announcement that pestilence is liable to break out among the survivors at the scene of destruction. At Johnstown and Galveston great apprehension was felt that one or more of the acutely infectious diseases would appear. Rumors that pestilence had already broken out found their way to the public press and threatened to do serious injury to the commercial interests which were already seriously crippled.

In the great majority of instances the fear of disease and particularly of epidemic disease grows from a contemplation of the disorder and great destruction of life and property, the demoralization that is everywhere apparent, and particularly the want of sanitary control which very soon manifests itself.

As to the reality of the danger which is popularly supposed to exist in the presence of dead bodies of men and animals, little need be said to those who are familiar with modern views of the etiology of the communicable diseases. By them it is known that a foul odor is only occasionally in itself a source of danger, while it is a most unreliable indication that disease-producing conditions are close at hand. According to generally-accepted theory, diseases which are transmissible and capable of becoming epidemic are incapable of originating in foul or decomposing matters. Although we cannot speak from conclusive and final evidence, we seem justified in the belief that every form of infectious disease is produced by a specific agent peculiar to it. This agent or its progenitors has existed for an indefinite period, and is only developed in large proportions and with dangerous virulence within the body of a living host. Thus, typhoid fever, bubonic plague, cholera, etc., are known to be bacterial diseases which occur only when the micro-organisms associated with them are carried by some means from one person to another. Familiar vehicles for the transmission of infectious material are water, flies, dust, and impure food. It follows, if these views be accepted, that those who are compelled to handle the bodies of previously-healthy men and animals killed by violence need have little fear of contracting any of the so-called filth diseases, no matter how far decomposition may have proceeded. Diarrhea is perhaps the worst form of illness to be anticipated. And what is true of the bodies of men and animals is true of vegetable matter as well. In a close observation of the conditions at Galveston, while in charge of the sanitary cleaning of that city, I failed to note an exception to this rule.

The conditions are different, however, when we have to deal with the remains of persons ill of, or killed by, disease. During illness and after death the excretions and surfaces of the person are frequently highly dangerous as sources of infection. Here are to be found the bacteria or special agents which are capable of reproducing the disease with which they have been associated. It is obviously important that contact with infectious material be avoided, that it be prevented from disseminating, and that its source should be removed as promptly as possible. These ends are to be accomplished among the refugees, as in our large cities and military camps, by isolating each case of acutely contagious or infectious sickness, disinfecting contaminated objects, and destroying infectious material as near its origin as possible.

In the conditions which now obtain in the West Indies probably very few people have been killed, except those who were in health, while among the large number of persons who remain there will almost certainly be some sickness. Therefore, it is safe to say as a practical working proposition that the danger of pestilence lies not among those lifeless matters which have been destroyed by the volcanic eruption, but rather among the survivors and rescuers.

Obviously the first great need of the people of Martinique is food. This demand will be met in proportion as the machinery for reaching the multitude who will be in need of provisions is perfected. Already large quantities of rations are on their way. An administrative organization suited to the distribution of this form of assistance, which later on must include clothing and shelter, is exemplified in the work of the Red Cross Society in America. Provided such an organization can become operative with reasonable promptness so that a food supply which shall be suitable both in quality and quantity can reach the people within a few days, the most that can be done for sanitary safety in this direction will be accomplished. The penalty of failure to reach the island in time to feed the hungry populace will be famine.

Much depends upon the character of the food sent to the sufferers. Under ordinary circumstances the natives consume much fruit and other vegetable products. Martinique imports from the United States salt beef, pork, ham, Bordeaux bread, beans, peas, lard, cotton and oil, smoked herring, cod-fish and biscuit.

Anticipating the present wants more carefully than the foregoing list would indicate, the United States reliefship "Dixie" has sailed with rations made up of four parts rice, one part cod-fish and two parts hard-tack. Under the circumstances these provisions seem to be well chosen. There is one item, however, which seems not to have been included in the list of asked-for stores. This is condensed milk.[1] There could hardly be a better food. Its one objection is its cost.

There is a psychological difficulty which is more difficult to manage satisfactorily than the physical elements in the problem of relief. If we are to believe press information, immense loss in the permanent resources of Martinique have occurred both in city and country. In St. Pierre $100,000,000 has been lost in real estate which lies buried under the ashes. The country people who have depended upon the soil, either directly for the value of the crops raised, or for the live stock whose sustenance is gained from the earth, are to be classed with the city population as being without means of future support. An appreciation not only of the overwhelming character of the destruction wrought, but the hopelessness of a resumption of remunerative employment on the island for a long while is certain to have a depressing and devitalizing effect upon the people. In this psychological condition we have an element highly favorable to disease.

In the history of great pestilence and plagues a state of widespread mental depression has generally been a precursory factor. Pestilence and famine are strongly associated in the popular mind, and there is some justification for this relation in the present teachings of sanitary science. Great distress, depression, hunger, exposure, and other forms of mental and physical wretchedness, when widespread, are among the best-recognized predisposing causes of epidemic. Such conditions, if they do not actually produce plague, typhus, yellow fever, dysentery, and cholera, at least prepare an ideal soil upon which these diseases can take root.

Yellow fever, plague, smallpox, dysentery, and the malarial fevers in their infinite and perplexing variety appear to be the diseases most to be apprehended at Martinique. All of these are capable of spreading with great rapidity and may become epidemic in this part of the world. Indeed, yellow fever is thought by some to be endemic at Martinique. According to last reports it was prevalent in Barbados, which is usually considered among the healthiest of the islands.

There is probably no disease more dreaded by the people who are subjected to it than yellow fever. It is particularly fatal to white people. Inasmuch as yellow fever haunts low-lying places in which marshes and decomposing organic matters are found, it is unfortunate that the island of Martinique, excepting for the highlands in the neighborhood of the volcano, should be low and apparently favorably situated for the propagation of this disease. Fort-de-France is its most unhealthy city. Yellow fever has been frequently epidemic in Martinique. Something like twenty-four epidemics have been recorded since 1688.

The danger from plague lies chiefly in the possibility that it may be brought in some manner from South America. Latest reports indicate that it may be in Brazil. From November 11th to March 2d last 105 deaths from plague occurred in the city of Rio Janeiro. Smallpox has been reported from Barbados and Brazil.

Under ordinary circumstances dysentery is one of the common diseases of Martinique and its vicinity and shares with malaria, with which it is often associated, the reputation of never being entirely extinct. It is probable that both dysentery and malaria, which are generic terms covering a number of diseases more or less alike and between which a clear distinction is not always evident, are both endemic. It is an unfortunate circumstance that the unhealthy season, the third and fourth quarters of the year, is close at hand. What has been said with respect to the prevention of yellow fever applies to the access of malarial fevers. The mosquito is to be regarded as the object against which unceasing warfare should be waged. As it will be practically impossible to undertake a crusade against the mosquito, particular attention should be given to collect the refugees as far as practicable from the haunts of this pest. High ground, the windward side of swamps and pools, and the avoidance of exposure at the times of feeding of the mosquito are measures which to some degree will be available.

It will, of course, be impracticable under the conditions which will obtain to exercise those measures of sanitation which science and a complete control of the people and the administrative power would make desirable. The best that can be done is to organize a sanitary corps as soon as possible and to begin the work of inspection and correction without any unnecessary delay. By the prompt coöperation of the various representatives and volunteer assistants sent from many sources, there seems no reason why an efficient sanitary organization should not be formed by the French authorities.

Having settled the questions of authority and coöperation, it will be desirable to establish headquarters and formulate a definite policy for the direction of the sanitary organization. The confidence and coöperation of the refugees should be encouraged from the outset. Much importance is attached to this point and to the desirability of distributing immediately and as widely as possible a knowledge of the purposes and methods, as well as of the powers, of the sanitary bureau. Secrecy as to the real condition of the public health, such as has been sometimes practised with regard to the identity and presence of communicable diseases, is not considered a wise policy; cases of illness should be reported by their proper names and announced as promptly and in as accurate a manner as possible. By this means, not only will the fear that epidemic and other diseases may be spreading beyond control be disarmed among the people at the scene of disaster, but the world at large will be greatly relieved of unnecessary apprehension.

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[1] We have since learned that the "Dixie" has at the last moment taken a large consignment of Nestlé's condensed milk.

A set of sanitary regulations for the guidance of the people may be issued to advantage, and should contain instructions as to the choice and use of food and shelter, the cleaning of living quarters, the repair of damaged household effects, the disposal of garbage and other wastes, especially excreta, and the methods of using deodorants and disinfectants.

With the idea of reducing the number of people to be cared for, as many as possible of those who are not usefully employed should be transferred to other localities. Guadeloupe, and especially the island known as Basse Terre, may offer some advantages for such transportation. At the same time it would be desirable to institute a quarantine system, although it is realized that the exercise of arbitrary authority in this direction may very easily lead to much trouble. The report that plague has for some time been prevalent in Brazilian ports gives to this element of sanitary regulation some appearance of importance.

One of the most important divisions of the work of the sanitary bureau should be the observation and direction of the refugees in their efforts to look after their own health. The people of the West Indies, in common with a large proportion of those who live in tropical and semitropical countries, have an astonishing disregard of the rules of hygiene. If practicable, a corps of responsible inspectors should be organized to move among the people in a systematic way to see that the regulations of the sanitary authorities are properly carried out and to supplement and interpret these directions by such sensible counsel and advice as can be given. Cases of disease which are capable of becoming epidemic should be watched for by these men with the greatest care, particularly in the overcrowded settlements and camps and in other places where the evils of congestion and uncleanliness of living are most liable to occur. When a case of infectious disease is discovered, the patient should be isolated and the premises disinfected as nearly in accordance with the practices commonly used in large cities as practicable. Hospital camps and isolation quarters will, of course, be needed.

The water-supply and food provided for the sufferers and helpers should be inspected systematically. Wells believed to be contaminated should be pumped out and either thoroughly cleaned or closed permanently. The etiological connection between epidemic diseases and infectious water-supplies should always be kept in mind. Water is dangerous not only when polluted by fecal matters, but also when it contains a large amount of organic extractives of vegetation or much saline matters. At this distance it is impossible to comment intelligently upon the procurement or protection of the sources of water-supply. Press reports indicate that it is very difficult to obtain water.

Of the great variety of the so-called disinfectants which will probably be sent to the scene of the wreck, the most useful will be quick-lime, chloride of lime, carbolic acid, creolin, and the organic peroxides of Novy. Although the public is tolerably familiar with the use of these chemicals, instructions should be given in the ways in which they may be employed to the greatest advantage. Particular attention should be given to the necessity of bringing about an intimate contact between the material to be treated and the disinfecting agent, the desirability of economy, and particularly the advantages to be gained by avoiding the necessity of using deodorizing and disinfecting materials.

Fortunately, the people of the Indies are accustomed to the use of whitewash, which, when freshly prepared, is one of the best disinfectants. Carbolic acid and also creolin, in five-per-cent. solution, are also effective. A hot solution of common washing-soda of about five-per-cent. strength is recommended as an excellent cleaning and germicidal solution. A strength of two-per-cent. soda in boiling water is suitable for tableware, dishes, etc.

In making a permanent disposition of decomposing or decomposible organic matters, as much use as possible should be made of the opportunities afforded for incineration. The bodies of horses, cows and other animals, and garbage and excreta may be easily burned if first sprinkled with rosin or oil. Bonfires may then be made over such material with fuel taken from the wreck. At Galveston a very large number of bodies were destroyed by fires which were kept continually blazing. In disposing of human remains, burial is to be preferred to burning, provided the graves or trenches intended for interment can be decently made and of a depth of at least six feet. All bodies disposed of in this matter should be placed in one locality which should be at least one hundred yards from any habitation or well. As far as possible excreta should be burned.

With regard to the removal of débris and cleaning about the scene of the wreck, it will be well to remember that the removal of infectious material or matters which are actually offensive or liable to become so does not constitute the whole duty to be fulfilled. An appearance of order and neatness is a condition greatly to be desired, since it makes for cleanliness and wholesomeness and is in itself an outward evidence of that control and moral support, which it is perhaps, after all, one of the highest functions of a relief organization to maintain.

CORRESPONDENCE.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

RELATION OF MALIGNANT AND RHEUMATIC ENDOCARDITIS—PRIMARY TUBERCULOSIS OF THE CERVIX SIMULATING CANCER—TUBAL PREGNANCY—FIBROMA UTERI—ANESTHESIA—CORTICAL GUMMATOUS MENINGITIS—THE CURE OF PULMONARY PHTHISIS—FAILURES AND SUCCESSES IN URINARY SURGERY—THORACIC HERNIA.

F. J. POYNTON and A. PAINE, at the Royal Medical and Chirurgical Society, April 8, 1902, read a paper entitled "A Contribution to the Study of Malignant Endocarditis." They had been led to study this subject during investigations of the pathogenesis of rheumatic fever. The relation between the two diseases is intimate, especially when the malignant endocarditis is associated with a previous rheumatic fever and during its course with manifestations of rheumatism. Since rheumatic valvulitis is known as "infective malignant endocarditis," a more accurate term would be "infective endocarditis." The question arises whether some of these malignant cases are not really rheumatic? The supposition is not new, but proof has been lacking because the exciting cause of rheumatic fever is not known. The evidence in favor of such cause being a diplococcus is now extremely strong. The results of recent researches have led them to conclude that there is a group of cases of malignant endocarditis of the same origin as rheumatic fever, on the following grounds: (1) Clinical experience favors the assertion and clinical cases are obtainable in support of the statement; (2) the morbid anatomy of the diseases is also a proof; (3) bacteriological and experimental investigations also agree with the view, because the diplococcus can also be isolated from cases of malignant endocarditis and grows in pure culture, reproducing that disease in rabbits and resembling the diplococcus of rheumatic fever in its morphology and cultural characteristics. Moreover, this germ of rheumatic fever will produce malignant endocarditis in rabbits and the diplococcus from malignant endocarditis will produce rheumatic fever in rabbits. Finally, every grade of valvulitis, from simple to malignant and *vice versa,* could be produced by these two diplococci.

A. H. N. Lewers, at the Obstetrical Society of London, April 2, 1902, described a case of primary tuberculosis of the cervix simulating cancer, treated by vaginal hysterectomy. The patient was married; thirty-six years of age; had never been pregnant; for nine months had had a bloody, offensive vaginal discharge with bleeding after coitus and after douching; had had pain in the left iliac region for five months, but not severe. The periods had been regular, three- to four-day type, without pain; the general health had been good up to a year before she came under observation. One aunt had died of consumption, but otherwise the family history was unimportant. On vaginal examination the condition of the vaginal portion of the cervix seemed to be identical with that found in many cases of cancer. Dr. Lewers performed vaginal hysterectomy. Recovery was good; about five years afterward the patient enjoyed fairly good health and had had no more bleeding. While in the hospital there was no evidence of disease in any other organ. Microscopical examination showed that the growth was tuberculous.

A. J. M. Routh showed a specimen of a Fallopian tube ruptured in two places near its fimbriated end. The woman was a multipara, twenty-five years old, six weeks pregnant, and had suddenly been seized with collapse and signs of internal hemorrhage. When the abdomen was opened the peritoneal cavity was found to be full of blood and the ovum in its intact membranes was found to be adherent to the edges of a rupture on the posterior face of the right Fallopian tube near its fimbriated end. The tube was ligatured, removed and found on examination to be ruptured both anteriorly and posteriorly. The patient rallied well and recovered fully. The tubal gestation sac measured 6 by 2.5 cm., tapered toward either extremity, making a more or less fusiform mass. Its walls were broken both anteriorly and posteriorly, one tear measuring 1 by 2 cm., and the other 2 by 2 cm., and both extending to within 2 cm. of the fimbriated extremity.

W. K. Walls in behalf of A. Wilson and himself, at the Manchester Clinical Society, March 18, 1902, presented a woman with fibroma uteri, showing several interesting features. Three months previously the tumor caused much abdominal enlargement; it was multiple, each segment being about the size of two fists, and one occupied almost the whole pelvic cavity and bulged the perineum outward. The cervix could just be reached high up above and behind the symphysis pubis. The patient was, according to the history, four months pregnant; this condition showed doubtful physical signs, owing to the fibroid complications. Because of a recent and active infection with syphilis, for which the patient was treated, no operation was performed. A month later abortion occurred and a putrid six-month fetus was delivered with difficulty. In showing the convalescent patient to the society, the author directed special attention to the rapid postpartum involution. The retrovaginal tumor had shrunk to the size of a small orange and the others to a similar degree, so that the uterus and the tumors were now entirely within the pelvis.

B. Gardner, at the West Kent Medico-Chirurgical Society, April 4, 1902, opened a discussion on anesthetics, recommending the use of a mixture of chloroform and ether in the proportion of one to two parts respectively administered on a Rendle mask. In his opinion this is the safest, most convenient and most suitable anesthetic for general use. He considers that chloroform is used more often outside the hospitals than has been supposed. It will be of great advantage, bearing in mind the difficulty of ether administration, to urge the use of the mixture referred to on account of the lesser danger of the second stage of narcosis. Under the influence of chloroform alone many deaths had occurred after the struggling, and it was to this factor that he wished to draw particular attention. His strong belief is that if no asphyxial factor be allowed to arise during chloroform narcosis, the accurate adjustment of the dose is a very simple matter. On the other hand, since chloroform is a paralyzer of the heart and since asphyxia acts also secondarily on the heart, a very moderate degree of the latter will turn the scale and produce a depression commonly ascribed to chloroform alone. Unrecognized obstruction to breathing is, in his opinion, the cause of most of the fatalities.

Dr. Crowley read notes on a case of cortical gummatous meningitis at the Bradford Medico-Chirurgical Society, March 25, 1902. The woman was fifty years old; complained in October, 1899, of severe headache and vomiting; suffered, in June, 1900, several fits with convulsions involving the left arm and face without loss of consciousness. Examination revealed tenderness to percussion in the right frontal and parietal regions with some muscular weakness of the left side of the face; commencing optic neuritis on the right side. Under iodide of potassium she improved sufficiently to go to a convalescent home in July. On August 15th she was again admitted to the hospital with headache, vomiting and twitching of the mouth on the left side. Iodide of potassium and mercury were given and by November 1st she was well enough to go home. She relapsed again in about one month and again improved under treatment. In May, 1901, her symptoms were again present and intense and in July of that year J. B. Hall trephined, but no tumor was found. Both the headache and vomiting were completely relieved by the operation, but three weeks afterward complete paralysis of the left side of the body appeared. She died six months after the operation. Postmortem investigation revealed an extensive tumor occupying the surface of the brain and involving the frontal and parietal regions, adherent to the dura mater and penetrating far into the brain substance. Apart from this the brain was normal and there was no meningitis. As to whether an earlier operation would have relieved the condition, he considered that the symptoms were due not merely to gumma, but also to syphilitic changes in the surrounding vessels; consequently the operation could not very well bring about a cure.

E. Duncan, at the Glasgow Southern Medical Society, April 3, 1902, reviewed the treatment of pulmonary consumption from the earlier part of the nineteenth century to the present time. He pointed out that open-air treatment, so much lauded to-day, was advocated in England by G. Bodington in 1840. Particularly as to the curability of phthisis, he gave a detailed account of cases seen in private and hospital practice and undoubtedly cured. He had known patients in whom there had been found all the signs of consolidation and excavation with numerous bacilli in the sputum to be completely restored to health and strength. With regard to treatment he believed that a persistent germicidal course was very efficacious indeed, as follows: Carbonate of guaiacol in large doses, creosote with cod-liver oil (5 minims to the dram); inhalations of pinol and eucalyptol, and, in the absence of catarrh of the bronchi, formalin solution in 10- to 20-per-cent. strength. Diet, he said, should be forced. Four pints of milk a day should be added to the ordinary fare. Much can be gained by mere open-air living, he always insists upon it.

H. Lund, at the Rochdale and District Medical Society, April 3, 1902, discussed the question of failures and successes in urinary surgery. He described cases illustrating the difficulty caused by a large lacuna magna in catheterizing and in treatment of gonorrhea, the distensibility of the female urethra for the removal of stones, the evils of white wax in urethral bougies, and the advisability of sounding the bladder when performing circumcision in children. The danger attending even such a simple operation as circumcision was emphasized by reference to the case of an old man who had cerebral hemorrhage with hemiplegia the day after circumcision was performed. Enlarged prostate gland could be relieved sufficiently by careful catheterization. The advantage of operation was immediate and sometimes only temporary. Freyer's operation probably really consisted in the removal of an adenomatous mass which compressed the prostate. The suprapubic operation was best in all cases of vesical calculus. Syphilitic ulcers of the bladder are difficult to recognize, but yield to appropriate treatment. Varicocele is best treated by the open method with excision of a length of vein. The most certain cure for hydrocele is excision of the sac. His points were illustrated by case histories and he closed his paper by mentioning cases of renal calculus, hydatids of the kidney, and one of intermittent hydronephrosis treated by nephrorrhaphy in which a large granulating surface was left and the patient kept on his back for three weeks with a successful result.

H. P. Miller showed a specimen of thoracic hernia at the Esculapian Society, April 4, 1902, removed from a child two and a half years old, dying ten hours after the first symptom, vomiting. The hernia consisted of eight feet of large and small intestine, occupying the left chest, displacing the heart to the right side, occurring through an oval, smooth-edged, elastic opening one and one-half by three-quarters inches in diameters, situated in the left leaf of the diaphragm nearly at its lateral center and toward the spine. There was no known strain to account for this hernia. The small bowel was deeply congested.

BEAUTIFUL BERMUDA.

NOTES FROM A LAND OF BLOOM AND BALM.

To the Editor of the Medical News:

Dear Sir: Rocked in the cradle of the deep, 700 miles equi-distant from New York and Savannah, is a cluster of coral isles on which has been lavished a bounty so ample for the bettering of human ills, and a witchery of charm so plenteous for those questing pleasure alone that little wonder her bardic admirer was moved to sing—

"The wandering mariner whose eye explores
The wealthiest isles, the most enchanting shores,
Views not a realm so beautiful and fair,
Nor breathes the spirit of a purer air:
By the gay borders of Bermuda's isles
Where spring, with everlasting verdure smiles."

Truly, 'tis an enchanted land—where the real rivals the ideal, and fact matches fancy, after conning the story of these evergreen isles—of whose beauty, so unique, one can form no full idea till a sojourn is made 'mid its verdant fields and flowers galore. To most Americans, doctors included, Bermuda is practically an unknown land, and few realize that forty-eight hours from New York is a winter Eden; a lovely land, where flowers bloom the year round out of doors, where malaria never comes, where frost and the white mantle of winter are unknown, and where sleep-giving, health-bringing breezes, the panoramic beauty of sea and shore, and the quiet, restful, lotus-land-like life combine to make halcyon days.

The country, shaped like a shepherd's staff, is about twenty miles long, and from three-quarters to three miles wide. The area is sixteen square miles. The population is about 16,000, five-eighths being black. Hamilton, the leading town, has 2,000 inhabitants. There is little poverty. We never saw a beggar.

The health of these islands is almost always good. A healthful October presages a healthful winter. Protected and favored by the Gulf Stream, they enjoy a happy mean twixt heat and cold, ranging, usually, from 50° in winter to 85° F. in summer. The average for 1900 was 69.09° F., making Bermudians claim their climate—which is said to be like that of Persia—the most equable in the world; a claim that temperature tables, including the more variable ones of our most noted winter resorts—Jacksonville, St. Augustine, Los Angeles and San Diego—fully attest. There has been no epidemic in many years. The greatest mortality is under five. Long lives, eighty-five to ninety-five, are not uncommon. An ultra-centenarian was gathered to her fathers not long ago.

Two health officers, one at Hamilton, the other at St. George, enforce quarantine regulations, which are careful and complete.

Dr. Eldon Harvey is the Medical Officer of Health. From his last report, 1900, interesting statistics are at command. Births were 597—203 more than deaths. The death-rate was 21.03 per thousand. Enteric and chest cases led the list. Scarlet fever was brought twice and variola once, but prompt action prevented spread. Phthisis ranked first, and was three times greater among the blacks. The same ratio was noted in tetanus. The reverse obtained in cancer, nearly double in the white. Four of the Army Medical Corps having been ordered to Africa, Dr. Harvey volunteered for local service, and noted some points of interest touching malaria. Many soldiers came from the Transvaal ill with ague and its effects. Under changed climatic conditions they steadily improved, and by the close of the year the disease was almost wholly ended. Remittent fever in any form is unknown in Bermuda and those finding it elsewhere lose it here. Specimens of the Bermuda mosquito were examined at the British (Natural History) Museum and found harmless. The malaria-bearing brand is not here. From this study and from that of the yellow-fever epidemics here in 1843, '53, '56 and '64, he concludes: "The mosquito is far more dangerous and more deadly to man than the most poisonous snakes or the fiercest lions or tigers."

In 1894, through the effort of Dr. Harvey, a cottage hospital was opened a half-mile from Hamilton. Nine-tenths of its cost was given by Americans. Under his zealous care, it has prospered and proven a boon to tourists and town-folk alike. Last year an operating-room was added, which is aseptic to date, the floor and walls being tiled, and the equipment of white-enameled iron and glass, with plated mountings. An isolation ward will be added this year. The hospital is in charge of trained attendants, whose skilled service is at command of any when not on hospital duty. Great credit is due to Dr. Harvey for this good work.

Through the courtesy and under personal escort of

Major Morrice, of the Second Warwickshire Regiment, commanding forces guarding the Boers—of whom more than 4,000 are now laagered on five islands not far from Hamilton, I was given the privilege (no longer granted; I was the last civilian so favored) of visiting the captive camp. I talked with many, noted their food, their clothes, their sanitary surroundings and hospital care, and say—briefly, now, more, in detail, later—that the stories started by sensation mongers in some American journals anent poor food, bad clothing, much sickness and great mortality among the Boers in Bermuda are not true.

Through the kindness of Major Edye, one of the most accomplished medical men in English service—whose special courtesy to me it is a pleasure to mention—who has charge of the Prisoner of War General Hospital on Port's Island, which has 200 beds, I learned many facts of interest. There are 4,509 prisoners, ranging from nine to seventy years, and about 700 soldiers on guard, under his care. He has two assistant surgeons. Prisoners ill are at once sent to his hospital. Troops sick are treated in a hospital marquee on the islands they guard for from two to four days, and then, if not improved, are taken to the military hospital on the mainland at Hamilton. Port's Island is entirely a general hospital, the medical corps living on it and no others, save a telephone operator, a small guard and four press censors, who read about 5,000 letters for each mail.

The hospital was opened in June, 1901. Ground was cleared, two huts built and space made for fifteen marquees and twenty bell-tents. Each marquee has six beds, and one hut has thirty-two. Each bed is well supplied with spring wire and horsehair mattress, counterpane, blankets, sheets, bolster and pillows. A launch runs to all the islands each afternoon to bring to hospital any new cases. Patients are seen morning and night. Serious and fatal cases are recorded in detail. Each patient has a diet the same as the British soldier in a military hospital in time of peace. The dietary is ample and varied, and right here it may be said that the Boer, not ill, gets exactly the same food as the English officers and men, with the privilege of buying extras, at fair cost, if desired. The sanitary and surgical equipment is complete. The death-rate has been notably small; 951 cases having been admitted, with only 12 deaths. Every Friday a cablegram goes to Africa, giving details to friends of captives who are dangerously ill. Surely, this is a record generous and humane.

Bermuda is beautiful. Here is Nature's great sanitarium, but not for all. *Bermuda is not the place for consumptives* nor for any advanced in wasting disease. For insomnia it is unique to do good; many hapless mortals tossing in wakeful nights find it a peerless place to woo and win the good angel of sleep. It is a happy land for the neuralgic and those coming back to health from acute disease. For the weary and worn, for tired pilgrims along any line—be it brain or brawn—it is, indeed, a Mecca to which they can come with high hope of getting rest and relief.

I have been abroad again and again, but nine outings here have put me quite *en rapport* with the many charms—scenic, thermic and floral—that make Bermuda, to me, the most restful place on earth.

J. B. Mattison, M.D.

Hamilton, Bermuda.

American Therapeutic Society.—The third annual meeting of this Society was brought to a close Thursday afternoon after a most interesting session. The following officers were elected for 1903: President, Dr. T. A. Satterthwaite, of New York; 1st Vice-President, Dr. H. Barker, of Washington; 2d Vice-President, Dr. Osborne, of New Haven;

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held April 17, 1902.

The Vice-President, Dr. Virgil P. Gibney, in the Chair.

The scientific business of the evening consisted of a symposium on the

Diagnosis and Treatment of Smallpox.

Symptoms of Smallpox.—Dr. S. Dana Hubbard said that smallpox is a disease characterized by a very typical eruption on the skin and mucous membrane; this latter point is not always realized. The mucous membranes affected are usually those of the respiratory tract exposed to the air; at times, however, an eruption of smallpox may occur on the mucous membranes of the bladder, uterus, and intestinal tract. Mild smallpox is sometimes spoken of as varioloid, giving the impression that it is a different disease, and in so far it is a misnomer; like the word scarlatina, varioloid should be dropped. Cases usually designated thus may be called mild discrete smallpox, but not varioloid. The incubation period of the disease is twelve to fourteen days and the invasion takes from two to four days. The rash is usually well out by the end of the third day or the beginning of the fourth. One of the first symptoms of the disease is usually a very severe backache, commonly in the lumbar region, but possibly as high as the angle of the scapula, or only over the sacrum, and it may extend to the legs; it is usually accompanied by a very severe headache which is felt especially above the eyes. In children the period of invasion is often marked by a convulsion. Before the eruption appears the face is apt to be swollen and congested and epistaxis and sore throat are not uncommon. At times there is a characteristic rubescence. This precedes the typical smallpox exanthem which does not appear until late on the third or the beginning of the fourth day. The first eruptive lesions are apt to be noticed on some specially irritated part, as where the skin has been macerated by the perspiration of the fever. The back is the best place to observe the lesions for diagnostic purposes, since there the development is not disturbed by scratch marks. Lesions on the hand are not so characteristic because the hands are apt to be swollen and congested.

Development of Eruptions.—The lesions appear first as macules, lasting from eight to twenty-four hours. The macules are larger than the papules that appear later and form the areola surrounding the macules, which later become entirely lost in the papules. The papules roll like shot beneath the finger and seem to be in the skin itself; they are sometimes seen in varicella, but the halo that surrounds this lesion is wider than that of smallpox and the papule does not necessarily occupy its center, as is almost always the case in smallpox. The papules develop into vesicles having a firm, dense base. These vesicles are quite firm and do not break easily unless they are macerated by the perspiration due to heavy flannels. It is sometimes said that the occurrence of a mixed rash, consisting of all forms of lesions from papules to dry, crusted papules, is pathognomonic of varicella. This is not true, though the mixed rash cases are very rare in smallpox. It is not so uncommon, however, to see vesicles on the head when there are papules on the body. The lesions are umbilicated in the vesicular stage and pustulation occurs about the eighth day. As the result of the development of the lesions on the mucous membrane the tongue may become swollen and swallowing may become impossible. About this time, too, the patient is apt to be hoarse from laryngeal involvement. The pustules of smallpox do not break of themselves, but gradually dry up into scales and fall off. Beneath the thick skin of the palms and soles the inflammatory material surrounding the pustule is imprisoned and may have to be dug out, as it is infectious material.

Hemorrhagic Fulminant Smallpox.—At times there are fulminant cases of hemorrhagic smallpox in which none of the usual stages of the disease may appear; it kills before the rash makes its appearance. In more prolonged cases the papules pass to the pustular stage without becoming vesicles. In a recent case of this kind at Bellevue Hospital, the patient, a colored man, had bleeding from the nose, eyes, mouth, rectum and penis, besides high fever, and he was in a comatose condition. He died in four hours. Some years ago a city diagnostician saw a case of this kind and isolated it because he suspected typhus. When the eruption appeared it was at first not unlike that of scarlet fever; later characteristic shot-like papules appeared, but in the midst of macular hemorrhagic lesions very dark in color, and the patient died before the disease had proceeded any farther.

Differential Features of Smallpox.—Dr. S. Pollitzer said that the early diagnosis is not more important in any disease than in smallpox. Diagnosis may be simple, difficult or impossible. It may be readily made if the affection be typical; it is often impossible when complications are present or during the pre-eruptive period. In suspicious cases it is a good rule to look for a vaccination mark, and if there be none the patient must be regarded with suspicion. The preliminary rash is either scarlatiniform or morbilliform in character. The differentiation from scarlet fever or measles, however, may be made by the absence of the characteristic angina of scarlet fever and the catarrhal symptoms of measles. The appearance of the rash, especially in scarlet fever, is followed by a decided remission of the symptoms which does not always take place in smallpox. This preliminary rash, usually of rubescent character, disappears in from eight to ten hours; this, of course, does not happen in scarlet fever. Very early in smallpox petechiæ sometimes occur on the back, but only in very severe cases. Cerebrospinal meningitis may give the severe backache so characteristic of incipient smallpox, but the macular lesions of the disease have a tendency to appear with an irregular distribution in successive crops. Moreover, almost at the beginning of the disease a spasmodic condition of the muscles, with throwing back of the head and stiffness of the neck, develops.

Cryptogenetic Sepsis.—This is a type of disease that might not be considered confusable with smallpox, but it has sometimes been confused. In a case recently seen by Dr. Pollitzer the patient was a young woman of thirty, non-vaccinated, who on the sixth day of an illness that had been accompanied by severe backache and fever had hemorrhages from the uterus and a scarlatiniform rash. The conjunctivæ developed an ecchymotic condition and the illness was of fulminant type. Hemorrhagic smallpox was suspected, and when death took place this seemed the most likely cause. At autopsy, however, the woman was found to be suffering from a septic endometritis and a number of septic emboli were found all over the body.

Premonitory Symptoms.—In the midst of an epidemic the premonitory symptoms of smallpox may have some value as calling attention to and arousing suspicion of the character of the disease; when other infectious febrile diseases are prevalent at the same time, however, these early symptoms can have very little real diagnostic value. Grip, for instance, can simulate smallpox by producing pains in the back, headache and muscular and bone pains; rheumatism may also simulate smallpox in this way.

Confusion with Other Forms.—Measles and varicella were confounded by physicians until separated by Sydenham. It is not difficult to separate them once the rash of measles appears; this usually occurs on the fourth day, while the smallpox rash appears at the end of the third day. A more difficult differentiation is that between varicella and variola; as a rule, the vesicle of varicella is much more superficial than that of variola and is covered by a thinner membrane; when the roof of the vesicle is ruptured the vesicle collapses. This does not happen in smallpox because the smallpox vesicle is multilocular. The vesicles of varicella occur very rarely on the palms or soles; in smallpox these parts are practically never exempt from lesions. The diagnostic importance of the lesions of the palms and soles has been underestimated; if these regions be free from eruption, the disease is usually not smallpox. The bromides and iodides give rise to a rash which, in its early stages, resembles that of smallpox, but there is little liability of confusion. This rash is not accompanied by fever and does not occur on the palms and soles where there are no sweat-glands. The most important ailment that must be differentiated from smallpox and has often caused mistakes because of its close resemblance is the pustular syphilide; good authorities in cutaneous diagnosis, insist that it may be absolutely impossible to distinguish this disease from smallpox, except after several days of careful observation. The pustular syphilide is usually accompanied by a febrile movement. The remission that occurs in smallpox after the rash is out does not occur in the pustular syphilide; the lesions are more sluggish in their development. While the palms and soles may be affected, lesions are usually not present on these surfaces. In a certain number of cases smallpox may be so mild and its lesions so sparse as to make the diagnosis very difficult. The existence of recent, positive vaccination removes suspicion of the character of the disease. Negative vaccination, however, does not give significant evidence.

Treatment of Smallpox.—Dr. George H. Fox said that, while many remedies have been suggested for smallpox, it is now generally conceded that no remedy will abort the disease or lessen its severity, and no general set of remedies can be outlined that will be suitable even for the symptomatic treatment of cases at all times. Careful nursing and individual attention are the requisities. For very light cases, such as occur in patients who have already had smallpox, for second attacks of the disease are not so rare as has been thought, and for those that occur after vaccination, very little treatment is required. At times very light attacks of smallpox occur, even among non-vaccinated persons who have been previously healthy. In the malignant form of smallpox, treatment is useless. The successive stages of the disease in the severer form require varying treatment.

Prophylaxis.—Prophylaxis consists in general in vaccination, because as a rule smallpox comes as a surprise. Vaccination after exposure to smallpox undoubtedly does good, but there is a difference of opinion as to whether it is always absolutely protective; the balance of authority favors the idea that if it does not give immunity it causes the smallpox to be much lighter. Some people say that vaccinia and variola may run their course side by side when the variola is already in the system at the time the vaccine material is introduced. Welch, of the Municipal Hospital in Philadelphia, says that vaccination performed immediately after exposure protects materially and may prevent the development of smallpox. Vaccinia has an incubation period of eight days, variola twelve days. The protective of the first may anticipate the invasion of the second. Secondary vaccination runs its course more rapidly than primary vaccination, so that in people already vaccinated some years before there is greater hope of anticipating smallpox. Humanized virus runs a more rapid course than bovine material and is more uniformly successful, so that it may be employed late in the incubation period of smallpox. After all, this incubation period may be delayed up to the fourteenth day or even longer. Vaccination may do great good and can do no harm.

Remedial Measures.—There is no specific remedy for smallpox. Hygienic measures are very important. A warm bath should be given at the beginning of the disease and the patient thoroughly cleansed; if the case be mild this bath should be repeated daily; if severe a sponging all over the body should be given daily. If the eruption threaten to be severe the hair and beard should be clipped in the beginning. If the case be mild, however, young women need not be asked to sacrifice their hair. For the headache an icebag or cold cloth frequently renewed may be placed on the head and will give great relief. This will not suppress the eruption as has been frequently said. Warm applications are most suitable for the relief of lumbar pains; mustard poultices should not be used, however, as they serve only to make the patient uncomfortable and do no good. They bring out a good crop of lesions on the back, but the theory that the more lesions there are elsewhere, the more the face will be spared is not true. For the sore throat so commonly an early symptom in smallpox, cold milk and ice are good. After the eruption comes out patients usually feel so much more comfortable that they are apt to go about their business as if well. Local treatment of the lesions does not arrest them nor prevent pitting. The use of a mercurial plaster, so often recommended, is more uncomfortable than beneficial.

Phototherapy in Smallpox.—Very long ago, in the fourteenth century, John of Gaddesden recommended red curtains and red walls for the rooms of smallpox patients. Sunlight was thought to aggravate the symptoms. A dark room was advised, partly, of course, because of the photophobia so common in the disease. When this treatment was first applied air, as well as light, was excluded from the room and the patient was nearly smothered. Part of the theory on which the supposed aggravating effect of light is founded, the fact, for instance, that the hands and face are not apt to suffer so severely, is not substantiated. The feet are apt to have as many lesions as the hands. Unna and Finsen showed that it was not the heat of the sun, but the ultraviolet rays of the spectrum which affected the skin and caused sunburn, while the use of red light was soothing for cutaneous lesions. Finsen has employed red light in the treatment of smallpox and has reported a certain number of cases with excellent results. At times the disease skips from the vesicular stage to convalescence, and especially without the severe secondary symptoms of the pustular stage. Red light was tried at the Riverside Hospital on North Brothers Island, but, the results proving unsatisfactory, it was given up. In 1893 red windows were put into one of the wards, but this seemed to have no effect, for, while all the cases were mild, this was usual in the epidemic of that year and all of them ran the usual complete course of typical smallpox cases. Dr. Cyrus Edson has data with regard to this experiment, but owing to the fact that it was a failure has not published the results. It is perhaps unforunate that it is always the enthusiast who writes on medical topics, while the skeptic and unsuccessful experimenter remain silent; the profession, however, should be enabled to know both sides.

Diet and Care.—The patient should be given a nutritious diet, and, especially in the secondary stage when the appetite is apt to be very meager, should be fed at regular intervals. In severe cases when there is stupor, the patient should be aroused from it in order to take nourishment. The natural sleep that comes just after the height of the disease should not be disturbed, however. During delirium it may be necessary to have recourse to rectal alimentation; before employing this the rectum must be cleansed thoroughly with soap and water. It is rather important that the mouth should be kept extremely clean; pyrozone or borolyptol or listerine in dilute solution, or some other mild antiseptic, should be employed two or three times a day. The cauterization of the pustules with silver nitrate is as useless as it is painful; it is too late to prevent pitting once the pustular stage has been reached. Something can be done by reducing inflammation before pustulation sets in; for this the cold compresses suggested by Hebra are grateful and useful, and it is doubtful if any other method does more good. Pieces of lint may be wet in cold water to which, if drying be too rapid, a little glycerin may be added, or the pieces may be covered with oiled silk.

Painful Conditions and Subsequent Treatment.—If the pain in hands or feet be very severe it may be necessary to immerse the members; if the pain be more general it may be necessary to keep the patient for a good part of the day in a whole bath. When the crusts begin to come off, carbolized vaseline should be used very freely for inunctions. For variola verrucosa, the form which leaves warty elevated lesions after the disease has run its course instead of the usual pits, applications of tincture of iodine are good. A 20-per-cent. resorcin solution in rosewater has also been known to do good.

Latent Smallpox Macules.—Dr. Fox then showed a series of illustrations of smallpox cases with the stereopticon; the first being a picture of a smallpox patient in the macular stage. This is the only picture of this kind that Dr. Fox knows to be in existence. In showing the series of pictures Dr. Fox remarked that he used to think he could decide from the appearance of a smallpox patient the stage of the disease; he now knows that while in general this is true, no definite decision can be made since patients often present very different stages on the same day of the disease. The illustrations show how smallpox lesions have a tendency to group themselves closely at irritated points, as beneath the hat band, under the cuffs at the wrists, where the shoe laces are tight and underneath tight garters.

Unusual Cases of Smallpox.—Dr. Dillingham said that smallpox is of sufficient importance to discuss even the unusual cases, and as in these is the great difficulty of diagnosis, they are more important than any other type of the disease. The incubation period is said to be from twelve to fourteen days; it is often longer and he has once known it to be seventeen days. The first patient in this series of cases was landed from a steamer on Swinburne Island; those who had been with him were confined on Hoffman Island and came down with smallpox on the sixteenth or seventeenth day after quarantine. Cases have been reported with an incubation period of twenty-one days. The period of invasion is said to be three days, but at times the first symptom of the disease is the eruption. Contrary to the usually accepted opinion, vesicles, papules and pustules of smallpox may occur in the same area of the patient's body. Some years ago a case of this kind, seen by a number of experts, was declared not to be smallpox because of the mixed lesions, but other members of the family came down with true smallpox. The lesions on the mucous membrane always occur at the same time as on the skin, therefore it is important to examine the mouth.

Malignant Forms.—Malignant smallpox may be differentiated from malignant scarlet fever by the fact that hemorrhages from the conjunctiva are seen in smallpox, but not in scarlet fever. The color of the hemorrhagic lesions is deeper, more mahogany-like, than in malignant scarlet fever. Some confusion may arise because of the prodromal erythema. This occurs in smallpox only in the groins and axillæ at first. Needless to say, this is not the location of the primary erythema of scarlet fever or measles, which usually affects the face. A fall of temperature after the eruption may be looked for, but does not necessarily occur in smallpox.

Supposed Pathognomonic Symptoms.—The vesicles of smallpox may be just as superficial at times as those of varicella. The first lesions seen may be vesicles and not macules. Dr. Dillingham was recently called to see a patient at Bellevue suffering from sore throat with some vesicles on the neck; in the evening there were typical smallpox papules. Lesions of the palms and soles may be absent in smallpox and may exceptionally be present in chickenpox. No single lesion is differentially pathogonomonic of smallpox.

Serum Treatment.—Dr. Huddleston said that serum has been found in the body of animals two weeks after vaccination which is curative for smallpox. It must be given, however, up to $^1/_{100}$ of the body weight in order to be curative. This would make for the ordinary sized man a pound and a half of serum. As to the protection afforded by vaccination, nurses and doctors freshly vaccinated at North Brothers Island do not take the disease. Cabot of Boston collected a series of cases from the literature, according to which it would seem that there is a special blood picture for smallpox. Investigations made by the New York City Board of Health, however, do not show this. A series of inoculations of monkeys have been made by the Board of Health with the idea of demonstrating with assurance that monkeys are susceptible to smallpox and not to varicella. The observations seem to show this and these animals may be used for the purpose of deciding whether a doubtful case is variola or varicella, thus avoiding the exposure and consequent epidemic that has often proved so serious in this country.

In closing the discussion, Dr. Hubbard said that he has seen a multiform rash consisting of macules, papules, pustules and scabs on the same patient. He thinks smallpox wards should be kept warm in order to avoid the pneumonia that may occur from the respiratory irritation uniformly present when smallpox is in the system. Undoubtedly the blood diagnosis will be of help in future epidemics. The serum treatment of smallpox seems to Dr. Hubbard to have a most promising future.

NORTHWEST MEDICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Held April 1, 1902.

The President, Wendell Reber, M.D., in the Chair.

Scientific Treatment of a Few Diseases of the Heart.—Dr. I. Newton Snively in a paper on this subject laid great stress upon the importance of an individual study of the general condition of each patient showing cardiac lesions, especial attention being directed to the condition of the kidneys. In the author's opinion no heart medicine is needed if the myocardium be able to perform its work in a satisfactory manner, and more consideration should be given to the heart muscle than to the heart murmur. Rest in bed for a sufficient length of time to allow the myocardium to regain its normal condition after any severe diseased process, was particularly remarked upon, and among the most important therapeutic agents in the treatment of cardiac conditions, rest in bed and properly selected diet were mentioned, together with the use of blood tonics in order to restore the blood to its normal condition. Physical exercise and light gymnastics were also thought to be of value in properly selected cases. In treating the acute infectious diseases the importance of preventing myocardial weakness by medicines tending to eliminate poisons from the system was noted, and as heart stimulants to be used in conjunction with rest in cases in which a weakness of the myocardium is manifest, strychnine, caffeine, digitalis, and alcohol were recommended.

The discussion was opened by Dr. Judson Daland, who also expressed the importance of individualization in cases of cardiac disease. He then remarked the weak action of the heart in typhoid fever, directing particular attention to the fact that in these cases the ordinary symptoms of cardiac weakness are not present, the conditions most impressing the observer usually being the feebleness of the muscular element of the first sound, which is particularly important not only as indicating the general condition of the myocardium, but also the condition of the circulation, and acts as an important guide to general medication. In the speaker's opinion, toward the end of the third week in typhoid fever there is a widespread change in the muscular organism of the heart; digitalis in this condition has not been of very much value in his experience, which he felt probably could be accounted for by the fact that there was a febrile process at work and widespread dilatation of the blood-vessels. The value of rest as a therapeutic agent in these conditions was considered, and in conjunction with this properly arranged massage and Swedish movements were recommended in order to stimulate the flow of the blood in the veins and thus produce a balance of circulation. Reference was made to excessive muscular exertion operating as a cause of hypertrophy of the heart, and the history of a case in which a man, who began shoveling sand into a cart at the age of four years and who was suffering from an extreme manifestation of this condition at the age of twenty-four, was given. This case was particularly interesting as the fact established by reliable measures that the ordinary causes of hypertrophy, such as syphilis, alcoholism, etc., were absent.

Ophthalmologist and the Clinician.—Dr. Thomas H. Fenton stated that he believed much valuable information could be gained in cardiac and vascular conditions by the working together of these two, ophthalmoscopic observations revealing many conditions of the arteries and veins which are valuable adjuncts to the physician in the treatment of his patient.

Condition of the Myocardium.—Dr. Howard S. Anders considered this the most important factor in the treatment of cardiac disease, and also, in his opinion, one of the most difficult of diagnosis. Regarding hypertrophy and dilatation of the heart, he felt that, while these two conditions usually occur in conjunction, the greatest difference in the apparent general condition of the patient is observed, depending upon which of the two is predominating. As a rule when hypertrophy predominates the patient remains in fairly good health, while the reverse is true in cases in which dilatation is the predominating factor. Attention was called to the importance of making a thorough physical examination in all cases, and particular stress was laid upon the position and character of the apex beat, the area of heart dulness and the character of the sounds of the heart; and, in the event of any of these conditions being discovered at a time when the patient is under treatment for some other disease, preventive measures were recommended. The value of maintaining a balance of the peripheral and venous circulation in order indirectly to relieve the heart of a certain amount of labor was commented upon. In cases in which the cause of the condition is apparently toxemic, it was recommended that the activity of the skin, kidneys and other excretory organs be stimulated and in cases of marked "right-sided" stress the use of mercurials, calomel or blue mass was thought to be of value. Hydrotherapy was recommended and it was felt that cold baths could be employed advantageously in nearly every case, by gradually reducing the temperature of the water and allowing the patient to remain in the tub for only a few seconds—just long enough to get the shock.

Dr. Samuel Wolfe considered that many of the cases of dilatation of the heart are due to malnutrition, and felt that the toning up of the general condition of the patient, particularly the nervous and muscular systems, would in many cases produce good results. The speaker inclined to the opinion that in many instances the physician is too hasty in insisting upon the patient's giving up his occupation and limiting the amount of exercise. While there are no doubt numerous cases in which these directions are necessary, the speaker felt that in a far larger majority it was much more important to prevent worry and regulate the diet, and unless the lesions had progressed pretty far he did not think the physician was justified in ordering cessation of all work. Rest in bed, if not too long continued, was thought to be of value in certain cases and methodical muscular exercise, carefully regulated by the physician, was recommended in suitable cases. The use of cold baths was considered of value and the belief expressed that cold sponge baths could be employed to advantage in almost all cases.

Dr. W. E. Robertson expressed the opinion that the most important factor in these cardiac cases was the condition of the heart muscle, and remarked upon the value of the position of the apex beat as an aid in diagnosis. The use of a line dropped from the center of the clavicle, instead of from the nipple line, which varies more or less according to the age, sex, and health of the individual, as the normal position of the apex beat, was recommended. The importance of preserving the balance of circulation was commented upon and this was thought to be especially illustrated in children, in whom the same symptoms of cardiac disease are not found as in adults. Failing compensation in adults is usually accompanied in its inception with some cyanosis and some edema, while in children neither of these conditions is common and, if present at all, it is only to a slight degree, the predominating symptoms in the latter class of cases being progressive pallor and asthenia. Rest in bed was thought to be one of the most important therapeutic measures, and the belief was expressed that the continued use of digitalis would in itself produce hypertrophy, a case being cited in which the patient had used this drug continuously for twenty years prior to his death, at which time the organ weighed two and one-half pounds. While the value of calomel in right-sided heart failure was not discounted yet the speaker felt that better results would probably be obtained from phosphates and the salicylates.

Dr. Judson Daland made a few remarks with reference to the anatomical condition of the heart in mitral regurgitation (non-inflammatory) secondary to dilatation, the discussion being closed by Dr. Snively, who urged upon the members the importance of improving the general condition of patients suffering from cardiac disease.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held April 14, 1902.

The President, Andrew H. Smith, M.D., in the Chair.

High Degree of Myopia Cured by Operation.—Dr. Edward Fridenberg presented a patient on whom he had operated for the relief of a high degree of myopia, producing an artificial cataract by decision, and removing the cataract. In this instance a second decision had been required. The result had been completely successful, and the patient had been enabled to resume his work. The operation was considered unjustifiable, the author said, (1) when one eye is blind; (2) when there is evidence of active inflammation in the fundus (involving the choroid or retina); (3) in patients over forty years of age, though this was somewhat doubtful.

The Present Status and Technic of Radiation Treatment and the Indications for its Use in Malignant Disease and Other Conditions.—The paper of the evening was by Dr. Wm. J. Morton, on this subject. The therapeutic aspects of X-rays, except for purposes of diagnosis, have been of slow development, though it is now admitted that the X-ray has cured cases of every known form of malignant growth, lupus, eczema, psoriasis, prurigo, acne vulgaris, sycosis, favus and rosacea. It is particularly in those affections least amenable to our former treatment that this agent is most successful. It is known to have cured tuberculous foci and it promises much in the treatment of tuberculosis. It also has a remarkable effect in relieving pain, it assists in healing burns, wounds, ulcers and sores, and there would seem to be great likelihood of its being able to cure leprosy. Its specific influence upon life processes is most openly manifested when exerted upon the integument; but repeated laboratory experiments have shown conclusively that small animals like mice and guinea-pigs, weeks after irradiation, suffer internal structural changes which even end in death. The point here emphasized was that radiotherapy is by no means to be confined to exterior conditions, but is equally applicable to diseases of the interior; there is even a bactericidal action.

An Unknown Therapeutic Agent.—Dr. C. L. Leonard of Philadelphia believed that in trying to find out the why and wherefore of the matter one would eventually get down to a scientific basis. All that can be said at present is that the employment of an unknown agent in an empirical method has resulted in the production of beneficial results in cases of malignant disease. Similarly, the application of the electricity developed by the static machine or the induction coil, in the production of Roentgen rays, but without the Roentgen ray tube or generator, has resulted in the production of equally beneficial results. Since these results were produced without the Roentgen tube, the therapeutic agent must be considered some other than the Roentgen rays, until they have been shown to possess additional therapeutic value. It is highly probable that the therapeutic agent is electricity employed in this form, since the experimentation of reliable men has demonstrated that electricity modifies the growth of malignant disease. If the successful treatment of all superficial and deep-seated malignant growths is to be developed along this line of therapeutic progress, the actual agents employed must be recognized, and their separate value determined. He was somewhat skeptical as to whether disease in different depths of the body could be reached. He had never seen a burn appearing on the opposite side of the body or of a limb from that which had been subjected to irradiation.

Early and Radical Operation the Most Efficient Method of Treatment in Malignant Disease.—At present, the most efficient method of treating malignant disease is the early and radical removal of all suspicious tissue by surgical operation. The diffusion, in the lay and medical press, of the opinion that all forms of malignant disease can be cured by radiation treatment, before this has been proved, will lead to fatal delay in many cases of malignant disease, that could have been cured by early radical operation.

The Present Limitations of Radiotherapy.—It should be clearly understood that this method is still in an experimental stage; that the beneficial results are confined to superficial lesions, and that sufficient time has not yet elapsed to prove that no recurrence or metastases will take place in benefited cases. Its application should be reserved for non-operable and recurrent lesions and primary superficial growths when the diagnosis is in doubt, or when the more benign character of the lesion makes it permissible to seek a more cosmetic result than would be possible by surgical operation.

The Protection of the Parts.—Dr. L. A. Weigel of Rochester has found that sheet lead answers perfectly for this purpose. The area operated upon can thus be limited, so that the tanning is limited absolutely to the size and shape of the opening. While protecting the parts immediately surrounding the area of irradiation, however, unexpected and undesirable effects in remote parts may be obtained. In two cases tanning of the face had occurred, and in still another case there was loss of hair and eyebrows.

Difference in Reaction in Different Individuals.—Until detail of technic is established it is better to begin with small doses, *i.e.*, good distance and short exposure—12 inches for 10 minutes. Scar tissue reacts badly and anemia and other conditions of malnutrition increase the liability to unfavorable reaction. Acute reaction in some growths is followed by retrogression. A burning sensation is not a reliable guide to discontinue the treatment; when that occurs serious damage may already have been done. The other factor, the quality of tube, could then (as nearly as possible) be arranged to agree. This would leave the idiosyncrasy more directly to be measured by the number of times it would be necessary to repeat the exposure.

Careful Attention to Detail Required.—Dr. Charles W. Allen said that the treatment required the most careful attention to detail. In a uterine case which he had been treating he on one occasion carelessly neglected to use the screen and to paint the vagina with methylene blue, and introduced the bulb directly between the thighs. The consequence was that a burn of the thighs was produced. The patient was wearing an abdominal pad at the time, however, and the skin was left uninjured where its rubber bands passed. A mucovaginitis was also set up. In regard to measuring the X-ray, it seemed almost superfluous to talk about doing this when it was not known what the agent really was. An instance in which relief of pain was strikingly shown was that of a case of cancer of the rectum in which the patient had previously been suffering excruciatingly. If this treatment never accomplished anything more than to afford relief from pain and to inspire patients with new hope, it had already proved a great boon.

Idiosyncrasy.—Dr. Carl Beck said too much must not be asked in regard to the character and action of the Roentgen rays. No one has ever seen the bacillus of syphilis, and yet treatment of that disease is successful. He did not see how to explain the difference of reaction in different individuals except on the hypothesis of idiosyncrasy. Such idiosyncrasy might be compared to iodoform idiosyncrasy, from which about one patient in every fifty suffers. In regard to lupus it might be truthfully said that radiation is the *only* treatment for this disease to-day. Even lupus erythematosus, which had for so many years been the opprobrium of the profession, was cured by it. With regard to cancer he was still somewhat skeptical, though some results had proved very much better than he had anticipated. But in his opinion it would be extremely unwise to substitute the X-ray for the scalpel. In regard to operating upon cancer of the breast the opinion of surgeons had undergone changes from time to time. The X-ray, he believed, should not be resorted to as long as the knife could be used. It was a fact that at the present day the prognosis in malignant disease was greatly improved, for the reason that patients consulted the surgeon much earlier than was formerly the case. After the knife had been extensively used, however, it was well to resort to the X-ray, which might be of service in destroying any cancer cells that might be left. In employing it he, as a rule, preferred a soft tube, making use of the hard tube only when interior penetration was required. He did not think that any case of cure in internal cancer had as yet been reported.

Beneficial Results.—Dr. H. Beeckman Delatour said that his experience had been limited to such cases as arise in general surgical practice. In one case of tumor of the transverse colon, which it was impossible to remove and in which an anastomosis had been made below the growth, the X-ray treatment had proved successful. After eight months the patient was in apparently perfect health. In all his X-ray cases the relief of pain had been marked and lasting.

The Removal of Fetor.—Dr. George G. Hopkins said that there was one point which had not been brought out in the paper or discussion, and that was the rapidity with which the foul odor of cancerous disease is removed by the X-ray treatment. In a patient, the half of whose right cheek was involved, the fetor was so great that the smell pervaded the whole house; after three exposures this was entirely done away with and under the treatment the malignant growth became reduced from six to four inches in size. In one case of chronic eczema a cure was effected after eighteen treatments. In another patient, a physician, who had had eczema on the back of the hands for a number of years, only five treatments were required for a cure.

Not Equal to Surgical Operation.—Dr. Alexander B. Johnson said that all were agreed that the X-ray, or whatever the agent might be that was employed under that name, was capable of producing certain definite effects. He had already seen the ill-effects which the reports of its success had produced in the minds of many individuals. In a number of instances patients with properly operable carcinomata had come to him insisting that they be treated by means of the X-ray and had been turned away because they would not consent to a surgical operation. At the same time, he was willing to admit that the time might come when this condition of affairs would no longer exist. The cases of cancer in which he had employed the X-ray were inoperable ones. On this account his results were perhaps less favorable than those of some others. The statement had been made that while growths were under this treatment secondary growths do not take place. He had had one case, however, in which the nodules at the original seat of disease had disappeared, but during the last three months at least fifty nodules had made their appearance in other parts. In a case of carcinoma of the jaw also, the growth was apparently very much improved, yet the patient had been attacked by a secondary carcinoma of the neck, and it seemed to him that it developed much more rapidly than it would have done if the case had been left alone.

THE MEDICAL NEWS.
A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. 80. NEW YORK, SATURDAY, MAY 24, 1902. NO. 21.

ORIGINAL ARTICLES.

CONSUMPTION CONTRACTED IN COLORADO AND METHODS TO RESTRICT ITS SPREAD.[1]

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THE subject predicates the assumption that pulmonary tuberculosis contracted in Colorado forms a very important factor in our mortality statistics. It implies the existence of an indigenous disease in our very midst increasing at such a rate and assuming such proportions as to demand for its restriction energetic if not drastic measures in the way of legislative and municipal supervision. This position in its entirety I am not prepared to assume at the present time. Although heartily in sympathy with all rational methods of legitimate control, I am unable to accept the evidence presented to substantiate in the premises an alleged increasing prevalence of such cases.

It is freely admitted that consumption has been and is contracted in Colorado to some extent, and that it may be expected to originate here in the future, as in other centers of population. It is only with reference to the degree and practical significance of its presence that an unprejudiced inquiry is solicited. Attention is called to certain preliminary etiological considerations. Consumption, although a distinctly communicable disease through the almost ubiquitous distribution of the bacilli, is nevertheless acquired only by those rendered susceptible through environment, occupation, previous disease or inheritance. Unlike other diseases of purely bacillary origin, the infection is extremely slow and incremental in character, the contagion constituting a source of danger to such alone as are specially predisposed. It is only after prolonged exposure, and in some instances after repeated infection as well, that the individual resistance is finally unable to overcome the process without exhibiting the manifestations of the disease.

That tuberculosis develops occasionally in Colorado should not be ascribed, therefore, as resulting entirely or essentially from an intimate association with pulmonary invalids, nor cited as an instance of direct infection pure and simple from one person to another after the manner of certain contagious diseases. It is rather to be regarded as a natural and almost necessary incident to a greater massing of population, embracing all classes from affluence to poverty and including all conditions of intelligence and predisposition. There must inevitably result frequent disregard of certain elementary principles of hygiene, together with gross individual neglect of most ordinary precautions.

A direct causal factor in the development of the disease within the State might be attributed to the peculiarly unfavorable occupation of a considerable class of her people. Reference is here made to the conditions incident to the everyday life of the miner, entire absence of sunshine for prolonged periods, the inhalation of an atmosphere not only deficient in oxygen, but vitiated by dampness, dust and smoke. A protracted subjection to such conditions, together with the climbing of mountains and ladders in high altitudes, and the carrying of heavy burdens cannot fail to exert a deleterious influence throughout the respiratory tract, often resulting in chronic bronchitis and emphysema, with a secondary cardiac and circulatory disturbance, and finally with remote effects exhibited in the liver and kidneys. A soil more favorable to the tubercle bacilli (and this receptivity is the practical essential for the development of consumption) can scarcely be conceived.

Another factor of considerable importance in the etiology of consumption in Colorado is the strong, inherited susceptibility of a large portion of her youthful population, born of tuberculous parents and frequently subjected in early life, when especially predisposed, to continued and undue exposure. It is assumed that, as a legitimate result of the foregoing considerations, consumption in segregated instances may be expected to develop in Colorado, direct contagion, however, failing to afford by itself a complete rational explanation except in isolated instances, which, nevertheless, are known to exist. Therefore, conceding broadly the origin of consumption in Colorado on account of certain predisposing conditions favoring its development, it is insisted at the same time that this should not be construed as constituting an argument against the further intrinsic value of the State as a health resort, but rather as an emphasis to the fact that the disease not having attained greater prevalence is a remarkable tribute to the restraining influence of her beneficent climate. The present interest attaches to the consideration of the question, Is consumption developed in Colorado increasing from year to year to any material extent?

Upon the answer to this question depends in great measure the proper attitude of the profession with reference to a problem extremely difficult of solution and capable of offering, at present, honest differences of opinion. The subject is one of momentous importance with a vital relation to our resident population and to pulmonary invalids as a class. It is at once manifest that there rests upon the State an imperative obligation to secure adequate protection for her communities without unnecessary infringement upon the rights and privileges of her consumptives. An enormous responsibility must be assumed by the medical profession in its advisory capacity pertaining to this subject. The exhibition of apathetic indifference and ignorance is equally to be condemned with an immoderate professional attitude, tending to create an intolerant popular prejudice and to inspire exaggerated feelings of alarm. The physician should be confronted by his obligation to consumptives no less than to society. The rights of each should be accorded a wise and conservative regard. The situation demands a calm, dispassionate and judicial inquiry, the evidence presented to consist of a cold analysis of statistical facts and not dogmatic opinions or preconceived ideas, and the final verdict to be rendered in accordance with directness and credibility of testimony rather than from majority predilections.

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[1] Address delivered by invitation before the El Paso County Medical Society at Colorado Springs, 1901, and read by request before the Denver and Arapahoe County Medical Society, 1902.

During the past decade public attention has been repeatedly drawn to an alleged rapid increase in the number of deaths from consumption contracted in Colorado. The source has been ascribed to direct contagion, and pulmonary tuberculosis is stated to have become already an important indigenous disease in Colorado, entailing future ruinous effects upon her communities.

In 1897 in a paper[1] read before the Colorado State Medical Society, and in 1900 in an article[2] presented to the American Climatological Association, I took occasion to protest against what appeared to me then as a premature conclusion concerning a subject of such importance. The logic of events since that time has only tended to strengthen my views as then expressed. Much as it is to be regretted, it seems almost unavoidable in support of my position to refer as briefly as possible to portions of my previous papers. The following quotation is therefore made largely for purposes of comparison with the published conclusions of a majority committee on tuberculosis appointed by the State Society as reported at the last annual meeting.

"A review of the material offered as evidence to establish the large proportion of cases developed in Colorado to those contracted elsewhere, indicates that the chief source of information is found in the records of the Denver Health Department. In the annual report for 1896, it is stated that the number of deaths during the past year from tuberculosis developed in Colorado 'is a little more than one-sixth of the total tuberculous death-rate.' It is also noted that the percentage of deaths from tuberculosis contracted in this State has been progressively increasing. In 1893 the proportion is stated to be 11¼ per cent.; in 1894, 13.7 per cent.; in 1895, 15 per cent.; in 1896, 18.4 per cent.

"Later reports from the Health Department show the proportion in 1897 to be 18 per cent., and in 1898, 19.7 per cent. The source of information upon which these statistics have been compiled has been the returns upon the death certificates.

"I must insist that the percentage of *deaths* is by no means a fair criterion of the *proportion* in Denver of cases said to have developed in Colorado to those contracted elsewhere. The pulmonary invalid from a distance, with hopeless prognosis, is usually advised to return to his home. Comparatively few such patients, fortunately, are permitted to die in Denver, removed from family and friends. The proportion, then, of one to six does not properly apply, as might be inferred, to the existing cases of tuberculosis in Colorado.

"It is easy to demonstrate the fallacy of the alleged rapid increase in the *percentage* of deaths from tuberculosis contracted here.

"It is apparent that a change may be effected in a given ratio by a change in either of its terms. In other words, the percentage of deaths from tuberculosis developed in Colorado may be increased from year to year by reason of an increase in the number of such deaths, the total tuberculous death-rate remaining unchanged. Likewise, the proportion is increased if the number developed in Colorado be constant, provided the entire death-rate from tuberculosis is diminished.

"While the figures of the Health Department show the percentage to have very rapidly increased, the actual number of cases originating in Colorado is but slightly larger for the four years, while the total number of deaths from tuberculosis is considerably less; this, of course, effecting an increase in the proportion, but possessing no further significance. Thus in 1893, the total number of deaths from tuberculosis is reported as 435, of which 49 are specified as contracted in Colorado, establishing a percentage of 11¼. The next year the total number was 377, a diminution of 58, while the number contracted in Colorado was 51, an increase of but 2 cases for the entire year. It is obvious at once that the increase is entirely insignificant, yet the proportion is published as being 13.7 per cent., a gain of 2.5 per cent. in the deaths, originating in Colorado for the year.

"An analysis of the statistics for 1895 and 1896 gives practically the same results. The number of deaths in 1896 is but two more than for 1895 and but 17 more than for 1893, in spite of an increase in that time of 26,000 in our population. Yet the percentage is much increased in 1896 on account of a diminution of 60 in the total tuberculous death-rate.

"It is of much interest to note that the statistics for 1899, furnished by the Health Commissioner, are decidedly at variance with those previously reported, and serve to some extent as an official refutation of the alleged rapid increase of pulmonary tuberculosis in Colorado.

"Despite a material increase in the population of Denver since 1893, the number of cases specified as having developed in 1899 is but four more than in 1893, and the percentage of such cases to the total deaths from tuberculosis is but 9.9, about one-half of that reported for the three previous years, and less than any proportion which has been determined since 1893. The compilation of these statistics was based upon the same official sources of information and with the employment of the same methods as in previous years."

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[1] Boston Medical and Surgical Journal, Oct. 7, 1897.
[2] Philadelphia Medical Journal, Oct. 13, 1900.

It is natural that much interest would attach to the report of the Committee upon Tuberculosis appointed a year and a half ago by the State Society, which was made public at the last annual meeting. To what extent does this report differ from the analysis of statistical data previously furnished?

The report of the State Committee on mortality statistics was based upon the returns collected by the State Board of Health rather than the Denver Health Department, during the sixteen months included between January, 1900, and May, 1901. These returns upon the death certificates were subjected to a rigid scrutiny by members of the State Health Department and the sub-committee of the State Society. An investigation conducted by different officials through the channels of another health department, and perhaps in accordance with other methods, might reasonably be expected to disclose a difference in final results entailing a possible modification of previous conclusions . It is interesting to learn ,therefore, that the proportion of deaths from consumption developed in the State to the total tuberculous death-rate for the sixteen months during which the statistics were collaborated is stated to be 13.32 per cent. This chances to be the same proportion as was published by the Denver Health Department for 1894, and would fail to indicate on the face of the returns any increase whatever in such deaths during a period of seven years. As a matter of fact the proportion is about one-third less than that reported for 1897 and 1898.

Another aspect of the subject is the significance of an annual increase in the population, which was not formerly considered in the official computation of vital statistics. It has been suggested in a former article that while possibilities of error necessarily attend any system of determining the relations of indigenous consumption, perhaps no method could be more satisfactory as affording at least approximate conclusions than the proportion of such cases to the population. Accepting the figures of the Health Department relative to the population of Denver and the number of deaths annually from primary tuberculosis since 1893 as an eminently fair basis for analysis, the percentage of such deaths per one thousand inhabitants was found to vary but little from year to year, the proportion being less in 1894 than in 1893; in 1896 slightly less than in 1895, and in 1899 three per ten thousand people as compared with three and a fraction in 1893.

Apropos of these results attention is directed to the recent report of the Committee upon Tuberculosis which states that for the first eleven months of 1900, the only time during which such statistics were compiled, the percentage of such deaths to the present population was three persons per 10,000 people. This coincides singularly with my analysis of health reports for previous years, being practically identical with results obtained for 1899 and 1893, being even less than in 1894, and presenting but trifling fluctuations in succeeding years. From this comparison it is readily seen that the committee's report again fails to demonstrate the slightest increase of indigenous consumption from the time the present agitation received its inspiration.

Still another phase of the subject is the relation of tuberculous infantile mortality to the total deaths from consumption contracted in Colorado. Further reference to my analysis of data obtained from the Denver Health Department shows that all persons reported to have died of tuberculosis developed within the State during a period of seven years up to 1900, nearly one-fourth were children under four and five years of age, of whom 85 per cent. died of tuberculous meningitis. In this connection it is noted that the Committee upon Tuberculosis reports a series of 76 cases concerning which special detailed information was obtained. To what extent does this report bear out previous results? Sixteen were born in Colorado, of whom 6 died under one year, 3 from one to two years, and 2 from two to five years; 27, or over one-third of the entire number, were under five years of age. Manifestly in view of the special predisposition such infantile cases should not be included as instances of deaths from indigenous tuberculosis. While at first thought, observations concerning tuberculosis in the native-born appear particularly conclusive, it becomes apparent that they possess but little significance in support of the supposed evidences of an alarming and widespread dissemination of the disease through direct contagion.

A similar consideration deserving mention is that of occupation, with particular reference to the development of the disease among miners. It is found by reference to the committee's report that out of a total of 224 cases, 49, or more than one-fifth, occurred among miners, although, it is fair to add, not specifically stated as being instances of so-called miners' consumption. The vast importance attached to such a large proportion among this class, modifying as it does any superficial conclusions, is appreciated when one considers that the tuberculous element is subordinate to other pathological changes, and that the infecting process is usually inactive, occurring as a mere final development and conforming to the chronic indurated type. It is suggested that these cases showing scarcely ever an association with consumptives, but exhibiting on the other hand constant disregard of general hygienic laws involving subsequent tissue changes and ensuring a favorable soil, should not be instanced as examples of the dangers of every-day contagion.

As bearing directly upon this line of thought the attention of the student is directed to an inconspicuous feature of the committee's report, *viz.,* the location in the State of indigenous cases. El Paso County, containing a greater relative proportion of consumptives than any other in the State, and therefore reasonably expected to yield the largest percentage, presents the remarkably small number of six cases, or about one-twenty-seventh of the whole This is partially accounted for by the wide streets, open spaces, outdoor life, enlightenment of her communities and comparative absence of social and industrial conditions tending to diminish individual resistance. Gilpin County, with a much smaller population among whom consumptives are exceedingly infrequent and direct contagion, therefore, less likely, but whose people are comprised largely of miners devoting less attention to hygienic laws, offers a percentage nearly three times as great. That Arapahoe County, with its density of population and peculiar conditions incident to a large city, should show a relatively larger proportion of cases than do smaller towns, is assuredly to be anticipated, and by the same token is it to be placed in a different category from the preceding communities between which reasonable comparisons can be made. As illustrating in the etiology of consumption the relative merits of the theory of its purely bacillary origin through direct exposure to contagion, as opposed to the conception of a necessary degree of receptivity of the soil, it is submitted that these observations have decided value.

A factor of no inconsiderable importance to which attention was called by me in 1897 is entire absence of proof that cases reported as developing in Colorado were actually contracted here, the contention being that the mere fact of the individuals exhibiting physical signs of tuberculosis less than one year after arrival is no evidence of its having definitely originated in Colorado. This consideration is somewhat summarily disposed of in the report of the committee in the following words: "If this distinction had any value the cases pertinent to this inquiry would be limited to those persons born in the State and who have developed tuberculosis without having left its borders." I can only regard this position as an arbitrary assumption for purposes of partizanship rather than as a logical postulate sustained by reasonable thought. The report further states that it is the opinion of the Committee that the important factor to consider is the development of the disease in an apparently healthy person and that such cases have been presumed by the Committee to have been contracted here. This must appear as an unfortunate admission, for the untenability of such a position is very quickly recognized.

This attitude unavoidably implies the non-acceptance of the theory of a latent tuberculous process and is plainly opposed to the incontrovertible testimony adduced in recent years demonstrating the extraordinary frequency of unsuspected tuberculous infection resulting solely through failure to examine thoroughly or to recognize and properly interpret physical signs. How many Colorado physicians can testify from their daily experience of individuals apparently sound, with clear eye, bronzed cheek and well-rounded proportions, yet victims of an incipient, if not active, infection. Is it not probable among the large number of people coming to this State with invalid relatives and friends, with individual resistance subsequently diminished through hardships undergone and privations endured, that some have developed an active process from an infection previously latent? If this be true, as is generally believed, it may be asked by virtue of what right should it be presumed that the development of the disease in apparently healthy people is sufficient ground to assert its origin in Colorado, without recourse to investigation and without at least a residence in the State of one or more years? Yet of the 60 cases previously alluded to in the Committee's report as coming from outside Colorado, 7 are said to have developed the symptoms before the beginning of the second year. As to condition on arrival, 7 are described as being apparently in exceedingly good health, 39 just in good health, 6 in fair health, 7 in average health and 1 with cholera. As to 22 no statement was made. In an investigation conducted along scientific lines and one of supreme importance to the profession and State, it is not what is apparent to a layman and what the committee presumes concerning which the public wishes to be informed, but as to what may lie beneath the surface and what the committee has ascertained by methods of definiteness and precision. The Committee further reports "that numerous experiments with animals have shown that animals may be as readily inoculated with the tubercle bacilli at this altitude as at a lower one. The tubercle bacillus has been cultivated with the same ease at this altitude as at sea-level, the only difference being that extra precautions had to be taken to guard against the evaporation of the media. Experiments by members of this committee have shown that climatic changes have no greater effect upon the tubercle bacillus here than at sea-level."

Interesting as these experiments are, I fail to appreciate their practical significance in an inquiry relating to the origin of tuberculosis in individuals. I am not aware that any claims have been advanced that the bacillus could not be cultivated in this as in any climate and that animals could not as readily receive the bacillus by inoculation here as elsewhere. It is well to remember that neither the cultivation of the bacillus in suitable media nor the development of tuberculosis following direct inoculation into the circulation of selected animals especially susceptible constitutes *per se* any valid argument concerning the practical every-day danger of contagion through the respiratory system of an individual not rendered unduly susceptible by impaired resistance.

The tenor of the committee's report as a whole leads irresistibly to the thought which is implied if not directly expressed in one of its conclusions, *viz.*, a rapid and alarming increase of indigenous cases. I am entirely unable to understand how any reasonable interpretation of official data justifies such a conclusion. If consumption contracted in Colorado be actually increasing to any extent from year to year, it remains to be demonstrated by statistical observations not as yet introduced.

Let it be distinctly understood that no negative testimony is here presented as a rebuttal of the positive claims of those with whom we are forced to differ. The position originally assumed and since adhered to is taken solely from the analysis of their own recorded official statistics, the authenicity of which has never been disputed and the logic of which must remain irresistible. It is freely admitted that clinical reports from conservative and painstaking observers add indubitable testimony from time to time of the existence of indigenous cases. That a more interested attention is being devoted to the investigation and report of such cases is certainly a source of congratulation and gives promise of perhaps more definite future knowledge. From information thus far received, however, it would appear that in a large proportion of the cases reported there had been abundant reason for the development of the disease by virtue of marked inherited taint, the presence of some recognized predisposing cause, occupation or special exposure, and certainly does not give the impression of any cause for widespread alarm. This is, I think, illustrated somewhat by my own experience, which comprises a list of 16 cases seen in private work during a period of ten years' practice in Denver out of a series of 1,200 recorded cases of consumption kept under continued observation. This is certainly not in accord with a proportion of one to six. In five occupation may be considered justly to bear an important relation to the etiology, two being old miners, one a stonecutter with chronic Bright's disease, one a layer of carpets constantly upon his knees and one employed in a steam laundry inhaling overheated air. With two a very reasonable doubt may be maintained as to the origin of the disease in Colorado, one having developed it six months after arrival and the other being in Sweden for a visit for six months immediately before its development. With three there is a distinct history of great exposure to direct contagion such as would seriously endanger health in any climate, both instances occurring among the poor occupying the same room and bed with another member of the family afflicted with the disease, and without the slightest regard for sanitary precautions. The remaining seven are offered as examples of tuberculosis contracted in Colorado for which no explanation is made other than a necessary bacillary origin and a receptive soil in spite of a favorable climate, and in three conspicuous instances despite an outdoor life in the country and good family history. No mention is here made of the several cases met with of tuberculous meningitis occurring during the first few months of life in infants born of tuberculous parents, as these do not appear to come within the scope of this inquiry.

The report of the Committee upon Tuberculosis of our State Society discloses painstaking work and honesty of purpose reflecting all credit upon the motives and earnestness of its Chairman and active members. That some are unable to subscribe in full to its conclusions detracts in no way from its decided value as a contribution to one phase of the subject, and serves but to illustrate at least that the preponderance of evidence in its favor is not so overwhelming as to preclude a different interpretation.

Before attempting the discussion of the second part of our subject, *viz.*, what measures are necessary to restrict the spread of consumption in Colorado, I must state my position with emphasis as opposed to the sentiment so broadly implied that a special necessity exists in Colorado for such an agitation on account of the alleged rapid increase of indigenous cases. Quite to the contrary, it is contended that there is no actual justification for a tuberculosis crusade in Colorado that is not equally demanded and perhaps more so in every other State of the Union. I protest against such immoderate public utterances from medical men in Colorado as have given the impression that the future of our communities is being seriously endangered from imported cases. Certain statements have been made in medical print that "consumption contracted in Colorado is making its way to the front as a scourge to us," that "Colorado must be saved to the world as a health resort," as if in imminent peril; and an appeal is made, "that we take up arms against the common enemy." As reflecting a laudable degree of interest in medico-public affairs and disclosing perfect integrity of motive and courage to express conviction, these expressions are worthy of commendation. Yet the fact remains that the promulgation of such views is not warranted by the facts and serves only to impart erroneous and distorted conceptions of actual conditions and to add to an already inflamed and somewhat intolerant public sentiment. Although deprecating all sensationalism that tends to inspire alarm no abatement is here advocated of hearty support to be accorded to health authorities, nor of earnest, combined and advanced efforts along the lines of preventive medicine. Measures necessary for the restriction of consumption should be enforced in Colorado as in other States. This is recommended not because there is an inherently greater likelihood of its increase here than elsewhere, but because, first, it is recognized that consumption is a communicable disease within certain limitations; second, that some degree of danger, therefore, exists in any locality despite favorable climatic conditions; and, finally, that it is known frequently to be preventable and hence imposes a direct obligation upon society to secure all possible means of prevention.

To this end it would seem primarily essential that uniformity of method be instituted as far as practicable in the different parts of the country. Adherence to a general concerted plan of action representing both an active educational propaganda and a campaign of responsible control should prove peculiarly effective and without prejudice to invalids or localities. Inasmuch as consumption is also known to be curable, another obligation upon the State, and perhaps no less imperative, is to make suitable provision for the care and at least partial maintenance of those afflicted and incapable of self-support. By this means also added protection accrues to society through the control thus offered of those unable in their ordinary environment to observe all sanitary precautions and who necessarily tend to become in time with advancing infection a distinct element of danger. It must be apparent that a double obligation rests upon the State of Colorado with reference, first, to the protection of her communities, and to scarcely a less extent to the comfort and welfare of her invalid class who have contributed so largely to her prosperity. The consumptive is a human being and is not to be subjected to the same ultra-scientific principles that would be accorded a guinea-pig. He is entitled at the hands of the State to every energetic provision that may save or prolong life and to every sympathetic attention that may help to alleviate suffering without having his burden made harder to bear or his chances of recovery from a most serious disease diminished.

At the same time the safety of the public must be exalted above the sensitiveness or pride of invalids even though they constitute a large part of the population. A judicious and intelligent consideration for the rights of each need inflict no hardship upon the other. The reciprocal relations between consumptives and society have been quite fully considered in a previous paper[1] and are not of especial interest in this connection other than as brief, summarizing allusions may illustrate the views then advanced concerning the valid claims of society and the measures recommended to secure protection.

1. Compulsory notification and registration of all cases of pulmonary tuberculosis; this not to imply placarding of houses or apartments, isolation or other personal humiliation, but furnishing opportunity for a degree of inspection and supervision.

2 The education of the consumptive himself in the way of instructive and persuasive appeals, resulting in securing his willing and active coöperation in the rigid observance of sanitary precautions, and submission to conservative control.

3. Special detention institutions for the ignorant or vicious who refuse to conform to established rules.

4. State sanatoria for the consumptive poor who, with such provision, can frequently be enabled to resume their duties and former positions in the community as wage-earners.

5. Segregation hospitals for the hopelessly ill and impoverished where the last comforts can be administered without the slightest degree of danger to families and society.

6. No interference with personal rights, family ties, social aspects, business pursuits, etc., except under conditions before described, unless rendered necessary by repeated and intentional infraction of prescribed regulations, quarantine and segregation otherwise being regarded as impracticable and ridiculous.

7. Periodical disinfection of apartments under the supervision of the Health Department and always after the death of the patient.

8. Prohibition of expectoration upon the sidewalks, crossings or any public place where people walk, or in any way not in accordance with the instructions either received from the health officer directly or authorized through the medium of the attending physician.

9. Separate and distinct methods of instruction directed to the general public, all official information being essentially of a reassuring nature, although not minimizing the possible dangers resulting from the presence of the careless consumptive.

10. Public attention drawn to a proper mode of living, occupation and environment, including the hygiene of the home with reference to ventilation and sunlight.

11. Formation of societies for the study and prevention of tuberculosis through whose responsible agency accurate and sustained conceptions may be transmitted to the community by means of educational literature, public meetings and addresses.

12. Government and municipal supervision of the construction of public buildings, tenement houses, factories, commercial establishments and conveyances.

THE TREATMENT OF PUERPERAL ECLAMPSIA.

BY WILLIAM E. PARKE, M.D.,
OF PHILADELPHIA.

Few conditions with which the obstetrician has to deal exceed in importance and gravity that of eclampsia. So disastrous is it in its consequences and so sudden and at times so unexpected in its onset that the resources of the physician are taxed to their utmost. It is important, therefore, that all doctors engaging in this sort of practice should be armed with a well-considered plan of treatment to carry out when the emergency arises. That "masterly inactivity" which has been commended in some other affections finds no application in this one.

I have to report the case of Mrs. ——, twenty-eight years of age. Her first pregnancy three years ago was terminated artificially about the eighth month of gestation on account of convulsions; of which she had four before the child was delivered and none afterward. The baby lived nine days and died of inanition. After recovery the patient seemed to regain perfect health. Repeated examination of the urine failed to show the presence of the slightest trace of albumin. Upon becoming pregnant the second time her health remained good during the early months of gestation, her only disturbance being a sluggish bowel which yielded satisfactorily to the ordinary aloin, belladonna and strychnine pill. Early in the seventh month, however, she began to feel out of sorts without having any definite symptoms which she could name. After about two weeks of malaise her ankles began to swell a little and she brought me a specimen of her urine which showed a trace of albumin. The quantity passed in twenty-four hours was slightly decreased. The patient herself, understanding the significance of this from a former experience, was naturally anxious. She was now directed by suitable measures to keep the bowel, skin and kidneys active. I next saw her five days later at her home, when she complained of a sharp pain between the shoulder-blades. Her face was distinctly swollen and the quantity of urine passed during the previous twenty-four hours was very small. I directed an immediate bath as hot as she could bear for twenty minutes, after which she was to be rolled up in blankets and hot bottles put about her and a pill containing calomel and podophyllin was given. I had scarcely gotten away from the house before a convulsion occurred. A neighboring physician who was summoned in the emergency administered morphine hypodermatically and left some bromide to be given at intervals. Two or three hours later when I returned the patient had had five convulsions and was semi-comatose. A few moments later another convulsion came on, during which I bled her and gave chloroform inhalations. I then set about producing forced delivery. An assistant was secured to give an anesthetic and I began to dilate the os. It admitted only the index finger and was very rigid, so that I made practically no progress until I introduced into the cervix a pair of scissors, which I had at hand, and slowly but forcibly spread the blades. This enabled me to introduce a thumb and finger and dilate according to the method of Harris. Dilatation was accomplished in something less than an hour and the child was promptly delivered with forceps. Ten minims of Norwood's tincture of veratrum viride were then given hypodermatically, the pulse being 130, and five minims more were given at half-hour intervals until the pulse came down to 60. Three doses were required, then the interval was lengthened to two, three and six hours, according to the need for it; after the first few doses it was given by the mouth. In addition to this, three drops of croton oil on sugar were placed upon the tongue and an ounce of Epsom salt was injected into the bowel. Later enemata containing 30 grains of chloral and 60 grains of bromide were given at intervals. I should have employed hypodermoclysis if I had had competent assistance and conveniences for sterilizing the salt solution. Two convulsions followed delivery in the course of three or four hours. The patient made a fairly rapid recovery, resuming household duties in two weeks. The child was kept in an incubator for a month and is doing well.

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[1] Journal American Medical Association, Oct. 27, 1900.

The treatment of such cases should begin before convulsions occur and may be conveniently considered under (1) preventive and (2) curative measures.

1. Many theories have been advanced to account for the occurrence of convulsions, but the presence in the blood of some toxic agents is now almost universally accepted, and our treatment based on this theory should be, on the one hand, to prevent their formation, and on the other to favor their elimination. For the former the diet should be of a digestible character and one containing a minimum amount of nitrogenous matter. Milk, while it contains nitrogen and is not uniformly agreeable to patients, is probably the most universally acceptable food under the circumstances. It is made more palatable to some by the addition of lime-water or carbonated water. To favor elimination all the emunctories should be stimulated, the chief ones being the bowels, the skin and the kidneys, and in a minor degree the lungs. To secure free bowel action a dram or two of phosphate of soda may be given in a tumblerful of hot water before breakfast daily; this is to be supplemented once or twice a week by fractional doses of calomel before retiring. These drugs by their action on the liver are thought to have a specially favorable influence on the toxemia. To these add the aloin, belladonna and strychnine pill if necessary. If the phosphate of soda does not cause two or three loose or watery evacuations, then Rochelle or Epsom salt should be substituted and repeated in teaspoonful-doses every two hours until the desired result is obtained. A more energetic action can be had from time to time by increasing the dose of the mercurial.

The skin is to be kept active by hot baths of twenty minutes' duration bi-weekly or even daily, followed, if need be, by wrapping the patient in blankets and surrounding her with hot-water bottle; or hot-air baths may be given when the conveniences are at hand.

For the stimulation of the kidneys, the patient should take copious draughts of water in addition to the milk. As a mild diuretic, Bashaam's mixture is my favorite remedy. If a more active diuretic is called for, the old formula of calomel, squill and digitalis, one grain each, three times daily may be resorted to. To this I would add full doses of nitroglycerin, if the pulse be of high tension. If this be not promptly followed by a considerable increase in the amount of urine passed it must be stopped, and at best should be given only for brief periods.

Suitable exercise in a pure air has some value in ridding the system by the respiratory channel of a certain amount of waste.

2. If, notwithstanding the measures detailed above, the renal insufficiency continue and there be evidence of increasing toxemia, such as headache, failure of vision, gastric disturbances, puffiness of the face and ankles, and high-tension pulse, then labor should be induced at once. If, perchance, a convulsion has occurred before this step has been taken, forced delivery must be resorted to at the earliest possible moment. Two lives may depend on the promptness with which we proceed. A single convulsion has caused death. To be sure, many pregnant women with albuminuria and swollen ankles pass through the periods of gestation and the puerperium without the sign of a convulsion. Such patients, however, should be most carefully watched, and if in spite of treatment evidence of toxemia increase the pregnancy must be terminated artificially and promptly.

The objection has been raised by those who oppose the plan of interference, that labor artificially induced may precipitate convulsions in one in whom the reflexes are already in a state of unstable equilibrium, and, furthermore, that the necessary manipulations may add septic infection to the already intoxicated patient. The reply to which is obvious: The patient should be anesthetized until the reflexes are abolished, and the cervix forcibly dilated, at the beginning, if need be, by instruments and later manually. When sufficient dilatation is secured instruments are to be applied to the presenting head, or version and rapid delivery may be resorted to by those who prefer it. The whole procedure is to be conducted with as much attention to antiseptic detail as any surgical operation.

Other remedies for the convulsions are not to be abandoned while the delivery of the baby is being accomplished.

For the treatment of the convulsions themselves numerous remedies have been championed by their various advocates. In a strong full-blooded person *venesection* is of the greatest value. Twelve to thirty ounces of blood may be withdrawn according to circumstances, the tension of the pulse being an index. Inhalations of *chloroform* can be used to avert convulsive seizures by giving it when the prodromal symptoms appear, such as twitching, disturbance of vision and sharp pain in the head and epigastrium.

Veratrum viride as a remedy for eclampsia has been much written about during the last few years, and my limited experience with it has impressed me favorably. It relaxes spasm and reduces pulse-rate and tension, and thus tides over an important period while the bowel and skin are being actively stimulated to eliminate the poison which is the source of the trouble. Ten minims of Norwood's tincture of veratrum viride may be given hypodermatically as the initial dose, and half this quantity repeated at half-hour intervals until the pulse comes down to sixty. The pulse may be maintained at this rate by administering the drug in five-minim doses at suitable intervals. A very weak pulse would contraindicate the use of this drug.

Chloral and *bromide* are valuable adjuncts to the medicinal treatment of the eclamptic period. They blunt the nervous irritability and induce sleep. I have followed the plan of giving half a dram of the former and a dram of the latter per rectum and repeating in from three to six hours, according to circumstances.

The treatment by *morphine* I have had no experience with, except as it was incidentally given on two occasions to my patients by another physician before my arrival. The plan has not appealed to me, inasmuch as it seemed to oppose the elimination of the poison with which the patient is already overcharged. It, however, has the endorsement of high German authority (Veit). If I used it at all it would be when the aforementioned drugs were contraindicated on account of weak heart action.

The use of *normal salt solution*, either under the skin or into the bowel, fulfils two valuable indications, namely, that of diluting the poison in the blood and that of increasing the activity of the kidneys, thus getting rid of the waste products of metabolism. It is especially indicated when blood-letting has been practised. I would accord it an important place in the treatment of this condition.

To induce prompt action of the bowels two or three drops of *croton oil* on a little sugar may be placed on the back of the tongue. Calomel can also be administered in this way. These remedies are especially adapted to comatose patients. These are to be followed up by repeated doses of a saline or compound jalap powder, and their action supplemented by enemata containing magnesium sulphate and glycerin. The skin is to be stimulated by the hot-air bath and hot wet pack to which reference has already been made.

At this stage little attention need be given directly to the kidneys. They are already overcharged, and relief is to be sought by delegating their function to the bowel and the skin. A little later, when the bowels have acted freely, benzoate of soda and digitalis may be given for a few days, and during convalescence Basham's mixture is to be given for a considerable period.

In the foregoing recommendation, the interest of the child has had very little consideration. In the text-books the infant-mortality in eclampsia is given at about 50 per cent. The chief cause of death of the infant is asphyxia due to interference with the placental function. Other causes are placental separation, placental apoplexy and toxemia derived from the mother's blood. After the child becomes viable it is probable that *accouchement forcé*, by anticipating these casualties, will save more babies than allowing the labor to proceed during convulsive seizures in the natural way. Before viability the rights of the mother so far exceed those of the child that the latter is scarcely to be considered in the management of the case.

VENESECTION AND TRANFUSION IN PUERPERAL ECLAMPSIA.[1]

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THE subject under consideration was forced upon my attention by the occurrence of the following accident: In the fall of 1895 I was called to treat Mrs. G., in her ninth accouchement. She was a short, puny little woman, about thirty-five years old. For four years she had suffered frequently from intensely severe uremic headaches. Her urine contained albumin and casts. With the exception of the kidneys, the organs were in a fair state of health.

On my arrival at the bedside I found a midwife in attendance, a stillborn babe and the placenta half way out. The information was volunteered that labor was rapid; that the child was born dead and remained dead in spite of all efforts at resuscitation.

The third stage was duly completed and the woman made comfortable. Half an hour later it became apparent that the patient was on the verge of eclampsia. Two typical paroxysms occurred in rapid and terrible succession before I had time to send for drugs and assistance. No more than three minutes after the second seizure, just as coma was deepening, a violent uterine hemorrhage set in, blanching the patient and—the medical attendant. This occurrence left the woman in a condition nearer God than man. Her pulse was hardly perceptible.

The uterus was hurriedly packed. After this, three quarts of warm saline solution were injected into the colon, followed by the liberal use of stimulants. In twenty minutes the woman began to rally; the pulse became notably better and the color of the face grew more natural. Coma had entirely disappeared. The patient looked around in apparent recognition of her surroundings. In three hours I felt I could safely leave her to the care of her untrained nurse. The woman made a good recovery; her confinement ended favorably on the tenth day.

At the time of this accidental occurrence, I was satisfied that the supervening postpartum hemorrhage was the main and only cause for the cessation of the paroxysms and the rapid and complete emergence from the coma. Consequently I expressed myself in favor of venesection in eclampsia when the case was reported to the Obstetric Section of the Academy of Medicine. Time and experience have fully confirmed my expectation. The additional lesson which I learned in the course of time is the enormous advantage and paramount importance of combining bleeding with infusion.

The following three cases are illustrative of the correctness of the foregoing statement:

Case I.—Mrs. L., twenty-five years old; primipara. Period of gestation, seven months according to her account. This woman had always been exceptionally well except for constipation. One morning after a distressingly difficult movement of the bowels she complained of dizziness and blindness. She went to bed. Shortly after she was seized with an eclamptic fit and within half an hour had four violent seizures. When I reached her bed she was in deep coma; face livid; bloody froth escaping from mouth and nostrils; breathing stertorous and a pulse incompressibly hard and tense.

There was no sign of beginning labor. It was difficult to reach the cervix, the os was completely closed. Urine was free from any trace of albumin when tested at the bedside. While I was preparing for venesection the patient had a fifth convulsion. The median cephalic vein was opened and twenty ounces of blood were withdrawn. Immediately afterward three quarts of saline solution were injected into the colon. The effect of the two was really magical. The woman rallied at once. The color and expression of the face became natural; the stupor vanished and the pulse though rapid was fair. During the day she received the benefit of four additional high saline enemata.

Toward evening labor set in and at midnight a living child was born without assistance. This woman passed through a perfectly normal puerperium and in ten days was ready to leave her bed.

Case II.—This case was that of a woman only nineteen years old and pregnant for the first time. The period of gestation was nine months. From her midwife, who was in attendance, I learned that the patient had always suffered from constipation and that for the last month or so she suffered from severe headaches and passed very little urine. During the second stage of labor the woman had an eclamptic fit "which lasted five minutes." The child's head being thoroughly engaged, the patient was rapidly delivered with forceps under deep chloroform narcosis; the child was living.

Exactly one hour after the expulsion of the placenta a paroxysm occurred; half an hour later, another. At this time the pulse was exceedingly hard and the urine, when examined, was found loaded with albumin. During her coma from eighteen to twenty ounces of blood were abstracted, followed, as in previous cases, by copious high saline injections. There were no more seizures after this; coma steadily and propressively diminished and the woman was out of bed in twelve days.

Case III.—This case was that of a woman forty years of age. She had been married ten years but this was her first pregnancy. The only points in her history worth mentioning are habitual constipation and inordinate obesity. Eight hours after delivery by a colleague, the patient was seized with tonic and clonic convulsions. In six hours she had eighteen seizures. The woman was rapidly sinking. The family was most obstinately opposed to blood-letting. Every form of treatment was tried and failed—chloroform, bromides, chloral, veratrum viride and morphine—all were of no avail. After battling with this desperate attack for fully ten hours with death staring in the face, the stubbornness of husband and friends at last yielded to counsel.

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[1] Read before the New York State Medical Association, New York County Branch, February 17, 1902.

A large and bulging varicose vein of the right leg was punctured and twenty-two ounces of blood were allowed to escape. This was immediately followed by a copious high enema of salt solution. The change in the dying woman's condition was at once for the better. In four hours, during which time three saline enemata were given, the profound coma visibly disappeared. The paroxysms ceased absolutely and the patient continued to improve from day to day. In four weeks she was out of bed. Her protracted stay in bed was due to anemia and a mild nephritis.

These four cases out of a total of six are cited to illustrate the effectiveness of venesection and transfusion in puerperal eclampsia. In severity they can equal any; but in the unbroken chain of rapid success there is no record to surpass them.

The abstraction of blood in eclampsia produces (1) an immediate favorable change in the woman's appearance; the cyanosis of the face; the rigidity of the muscles; the spasms and twitching which are often noticed even during the stage of deep coma, all stop at once. (2) The pulse, be it ever so hard, loses its tenseness. (3) The coma, be it ever so deep, yields either abruptly or slowly, but surely.

Transfusion (1) improves the pulse; (2) it induces free sweating and free micturition; and (3) it produces intense thirst in the awakened patient which causes her to drink copiously, and this is very desirable. These are the things which this method of treatment does and will do if you try it without bias or prejudice.

Now, for the rationale of this action: Venesection would seem to serve as a factor in partly removing the cause of eclampsia. The essential cause of the disturbance, be it urea or any irritant toxin, single or combined, is supposed to circulate through the blood. By abstracting a large quantity of the fluid the system gets rid of so much poisonous material floating therein. In addition to this unloading of toxin, the loss of blood relieves the congestion of the brain and its irritable centers which must exist during an eclamptic fit. Then comes the saline solution which not only dilutes the remaining toxins in the blood, but through its beneficial action on the kidneys and skin promotes their further escape. If this be the correct interpretation of the modus operandi of venesection and transfusion in eclampsia, then this method of treatment is not only rational but truly specific.

Venesection alone has been employed in puerperal eclampsia from time immemorial, but venesection combined with infusion or transfusion is a method and measure of comparatively recent date. The lack of the combination may, undoubtedly is, the cause of reported failures and discouragement. Blood-letting alone will meet the difficulty half way; blood-letting followed by transfusion will not only meet the difficulty, but will also remove it. Our ancestors bled everybody. They saw an indication for blood-letting in every abnormal condition. Eclampsia was no exception to the rule. Indeed the neglect of blood-letting in a pregnant woman was accounted one of the essential causes of eclampsia. At the present time venesection is a lost art, but it need not necessarily remain such. We can revive it and couple it with transfusion, and in this union we shall find a measure of great benefit to the unfortunate women who are overtaken by the greatest catastrophy of pregnancy—eclampsia.

The final point which merits allusion in this brief clinical paper is the indication for this form of treatment. Broadly speaking, the indication is puerperal eclampsia; but the question may be asked, Are there no restrictions, limitations and contraindications? Formerly venesection was only practised on the plethoric—the full-blooded with a hard or rigid pulse. Weakness, exhaustion, pallor and small pulse were considered conditions antagonistic to blood-letting. But since cases were reported which were on the verge of utter collapse and in which the liberal abstraction of blood was the only element of successful recovery, the indication seems to be all for and little against, venesection. The only precaution which one would suggest in treating the latter class of cases is that, whereas in the full-blooded the saline solution is, although not necessarily, injected into the colon and slow absorption waited for, in the feeble and collapsed cases the saline solution should be transfused directly into the circulatory apparatus.

At all events, this method of treatment can be recommended in full confidence, reason and sobriety. It is absolutely free from the zeal of the enthusiast, while it has all the support of painstaking experience.

PUERPERAL HEMORRHAGE.[1]

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Puerperal hemorrhage may be either normal or abnormal. The former may easily become the latter from simple or gross mismanagement during or after parturition. Hemorrhage during, or soon after, the second stage of labor may be normal or abnormal. Hemorrhage of any noticeable degree prior to the second stage of labor, and excessive hemorrhages during, or subsequent to, the second stage of labor are pathological and require remedial measures.

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[1] Read at the annual meeting of the New York State Medical Society, January, 1902.

The etiology of abnormal puerperal hemorrhage may be obscure or apparent. Elimination of dangerous factors in any case of labor not being assured, every obstetrician must be alert. The principal causes of antepartum hemorrhage are as follows: (1) Atony of muscles, blood-vessels, and nerves of the whole system, and especially of the uterus and its adnexa. This gives rise to hemorrhages that seem to be only a menstrual return and which are often really interruptions in commencing pregnancies. (2) Accidents giving rise to such physical disturbances as may come from excessive cohabitation, intense mental emotions and violent passions, injuries from falls, blows on the abdomen, coughing, vomiting, lifting heavy weights, etc. (3) Criminal or accidental abortions, with retention of the whole or a part of the placenta. (4) Abnormal insertions of the placenta with the varied forms of placenta prævia, from the simple adhesions of the placental border down to the inner cervical ring to the implantation of the placenta centrally over the os internum, so that after dilatation of the os the placenta only can be felt. (5) Neoplasms of the uterine body, especially fibroids. Although the rule stands good that fibroid tumors creating hemorrhage are usually preventive of conception, it often transpires that uterine myoma and pregnancy coexist, and hemorrhage may arise therefrom before, during, or after labor to such extent as to create a serious complication. (6) Ectopic pregnancies and hematoma.

Abnormal hemorrhage during labor or postpartum hemorrhage may occur from many causes mentioned among those of antepartum hemorrhage—as for instance, inertia, neoplasms, and placenta prævia; also from mismanagement of normal labor, inversion or rupture of the uterus, and tearing of the cervix and perineum.

One author in the "American Text-Book of Obstetrics," edited by Richard C. Norris, says: "Grave hemorrhage during or after the third stage of labor is rare;" also, "Postpartum hemorrhage is without exception the fault of the attendant." Such assertions savor not a little of self-adulation without large experience. A more rational statement on this subject is that of Lusk, who says: "Postpartum hemorrhage is not an uncommon event. The treatment of it is one of the most satisfactory departments of obstetrical practice."

The writer has encountered in the last year no less than five cases of excessive postpartum hemorrhage, arising from no lack of thorough watchfulness by the attendant, which would have proved fatal had there not been prompt action at the time of their occurrence. He has also seen two cases of antepartum hemorrhage complicated by uterine fibroids, resulting in early miscarriage. It is not too much to assert that normal puerperal hemorrhage, though more often than otherwise inclined to grave results if improperly managed, should always be favorably prognosed and be so correctly managed as to be a simple physiological process with no grave manifestations or results.

To a large degree the same may be said of abnormal puerperal hemorrhage. It can generally be so cared for as to insure safety to the patient and give credit to the attendant; nevertheless, when the etiological factor is either placenta prævia centralis, inversion or rupture of the uterus, or a large uterine fibroid, there is the possibility of the most skilful physician or surgeon being thwarted in his efforts, and the patient becoming the victim of most disastrous consequences.

The beginner in practice, the man not best equipped for serious emergency, the man many miles from a good consultant, or the ignorant midwife, is as liable to meet with serious cases of hemorrhage at any time as the most experienced, best qualified, and most thoroughly equipped obstetrician.

The writer's first case of placenta prævia occurred in his first year of practice on a cold January day six miles from town and from any other physician. It was a case of twins. The mother and one baby survived. The other baby was stillborn. He who has faced these desperate cases alone, and has been obliged to act without delay and without deliberate preparation or assistance, knows full well that the keenest conception of the whole subject of puerperal hemorrhage, the most complete knowledge and ability to manage puerperal hemorrhage, is second to nothing in importance and in interest throughout the whole realm of the practice of medicine and surgery. To perform successfully a delicate or a capital operation of any character within the precincts of a well-equipped modern hospital is an amusing pastime compared with the conduct of an abnormal puerperal hemorrhage in private practice, unexpectedly encountered and arising from some one or more of the serious causes already mentioned.

The treatment of normal hemorrhages, either antepartum or postpartum, is most lucidly outlined and taught in many standard works on obstetrics and by a large number of professional teachers.

Directions for the prophylaxis and management of abnormal hemorrhage are most carefully set forth and most learnedly taught by the same sources of instruction; and yet it is not unappreciative or derogatory to say that there is room for more light and knowledge and greater executive skill than are yet at the disposal of a majority of practitioners.

The most favorable statistics given by hospitals, *excluding rupture or inversion of the uterus, malignant or benign growths of the organ, lacerations of the cervix or vagina, and placenta prævia,* state that mild postpartal hemorrhage occurs once in a hundred labors, severe hemorrhage once in twelve hundred cases, and fatal hemorrhage once in six thousand cases. What the fatalities may be from the graver forms excluded in this estimate cannot be readily calculated. They are no doubt very large even with favorable hospital environment and the most skilled medical and surgical service.

It is easy to say we ought to do better work. There is room for improvement and there are plenty of opportunities at the front; but in this particular duty of treatment of puerperal hemorrhage it may fairly be asked, how, when, and where?

A brief synopsis of the rules for management of puerperal hemorrhage, generally taught, accepted and practised at the present time, may be helpful toward further consideration and suggestion in reference to these questions. The central idea of controlling hemorrhage, when the uterus is uninjured and no deep wounds of adjacent parts exist, is, *secure uterine contraction.* This should always be encouraged by pressure on the abdomen over the uterus, in the regular Credé method. To make provisions against abnormal hemorrhage in the simplest of cases is wise and prudent. Early in the second stage of labor have at hand a good syringe, preferably a fountain, a bed-pan, a pitcher of cold sterile water, a pitcher of hot sterile water, a bowl of small pieces of ice, a hypodermic syringe, hypodermic tablets of strychnine and of morphine, and a normal solution of ergot. Failure to control hemorrhage by usual pressure may then be followed quickly by lowering the head and shoulders, giving an injection of ergot into the thigh, a douche of hot water into the uterus, introduction of the hand, possibly of pieces of ice, into the uterus. The application of iron to the inner uterine surface is recommended by many authors, but I never use it. The faradic current of electricity if at hand may be resorted to with advantage. Pressure on the abdominal aorta will control the rush of blood in emergency. An antiseptic gauze tamponage, with a reliable nurse to hold the uterus down for hours after contraction and cessation of abnormal hemorrhage are secured, is the only safe condition in which to leave a patient during the absence of the medical attendant.

There is quite a noticeable disposition and habit on the part of teachers and writers, as well as operators at the present time, to delegate or assign to the gynecological surgeon many cases of abnormal hemorrhage that are really obstetrical cases. This is not a field that can be safely turned over at all times to the specialist alone. Every doctor who treats parturient women is liable to have thrust upon him at any time more or less responsibility concerning puerperal hemorrhage. It is gratifying to realize, as could not be realized in the earlier professional life of many who are yet in active practice, that there are well-equipped hospitals and well-qualified modern surgeons in many cities and towns, whose assistance can be secured when needed. Every recent graduate of these times and every "up-to-date" practitioner of obstetrics should be prepared at all times to conduct complicated labor cases and do minor gynecological work under thorough antiseptic precautions. The general rules already mentioned for managing most cases of normal and abnormal puerperal hemorrhage, either antepartum or postpartum, must sometimes be seconded by further measures of an operative character.

In all cases of abortion it is imperative that the uterus be emptied by careful curettage, if Nature does not fully accomplish that object within a comparatively short time. No woman with retained placenta is secure from hemorrhage which may be exhausting and, if attended with sepsis, dangerous to life.

Puerperal hemorrhage incited by neoplasms, whether benign or malignant, often opens up a question of expediency which may be solved by resort to simple methods of hemostasis, or lead to major surgical procedures like Cesarian section, hysterectomy, or the Porro operation.

Lacerations of the cervix and perineum must sooner or later be repaired surgically, and if operation be indicated at the time of their occurrence the medical man in attendance should be the one to perform it. Inversion must be followed by immediate reduction, or the case will soon become one for capital operation.

Rupture of the uterus and pelvic hematoma are often appalling in their sequelæ, even with the best medical and surgical attention promptly rendered. Placenta prævia from the first instant of discovery is a merciless warning to the stoutest heart that dire results will surely follow if the right thing is not done at the right time. The earlier and more certain the diagnosis of placenta prævia is made, the more secure is the life of both mother and child. If the accoucheur has thoughtfulness to examine the patient in the early months of pregnancy and at frequent intervals thereafter, and possesses the tactile dexterity of touch to diagnose placental displacement toward or at the internal os before dilatation or hemorrhage appears; or if he can diagnose the trouble in the incipient stage of hemorrhage, when there is but slight dilatation of the cervix, a great point is gained and he may elect the treatment most promising to the safety of mother and child.

If his first knowledge of the trouble comes to him after the seventh month of gestation, with a dilated os and a torrent of blood, there is little time for deliberation or election of method. The practice in vogue for centuries of temporary tamponage, followed soon after by instrumental or manual delivery, preferably accouchement forcé and podalic version, is the routine method of procedure. The life of the child is sacrificed and if the mother lives it is deemed commendable practice. With the exception of the introduction of asepsis and antisepsis in obstetrical practice there has been comparatively no advance in the treatment of placenta prævia for a long time past until within the last few years, during which time some clear-headed and accomplished surgeons have made a bold stand for resort to Cesarian section in selected cases of placenta prævia, with favorable environment for the performance of the operation.

Statistics and opinions on record for or against Cesarian section in placenta prævia are so scattered and lacking in conclusiveness to the satisfaction of the profession at large that I shall not attempt to reproduce them here.

Why should there not be advance in the line of saving babies as well as in other branches of medicine and surgery? Cesarian section and symphysiotomy in cases of deformed pelvis are fast improving the records of babies unsacrificed and mothers humanely treated and saved. Why may not the same be true of placenta prævia? If Cesarian section can be done as safely for the mother as podalic version, and if to this can be added the reasonable assurance of saving the life of the child, which is almost invariably sacrificed in podalic version, why should it not be done?

In the *New York Medical Journal* for November 3, 1900, is published a really classical paper by that brilliant surgeon and teacher, Dr. A. Palmer Dudley of New York, entitled "Ideal Method of Treatment of Placenta Prævia." It is a most satisfactory presentation of the subject in favor of this surgical innovation. The following, quoted by Dr. Dudley from Dr. Reynolds, states the case clearly: "When the mother is in good condition, uninfected, not exhausted by long labor, or by prolonged efforts at instrumental delivery, Cesarian section is so safe an operation that it may be resorted to unhesitatingly." That the writer may not be accused of having read or studied but one side of this topic, he begs to say that he has searched a large number of journals and some of the most recent text-books for points and evidence both *pro* and *con;* for fairness he would refer to a paper by Dr. Ehrenfest on "The Impropriety of Cesarian Section in Placenta Prævia," published in *American Medicine* of January 11, 1902. The latter summarizes his paper by flatly repudiating the statistics he quotes in saying, "The results of Cesarian section at large are worse than is usually stated," and then gives much emphasis to what he terms his method, which he teaches and which we all know is almost as old as the oldest medical literature and teaching, and has been found wanting for many, many years when real saving of the lives of mothers and children has been the object sought.

HOW SHALL WE TREAT SEPSIS FOLLOWING ABORTION OR LABOR?

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EVERY physician of any considerable experience has seen numerous cases of the above types of greater or less gravity, and no doubt all have some method of treatment. The very common occurrence of these infections and their too frequent fatal results lead me to think that many times proper treatment in the early part of the cases has been neglected, and often death follows when it might easily be averted.

Of course, we all now understand the great importance of surgical cleanliness in the early history of these cases, and that prevention, when possible, is better than cure. And I hardly need to urge before this body of intelligent physicians the duty of asepsis as a preventive measure. I shall not speak of the diagnosis further than to remind you that not all cases of fever following labor or abortion are due to infection along the genital tract, but such patients *may,* rarely, have fever from other causes, and these should not be overlooked. Neither is it necessary to speak now of the different varieties of infection, for while I fully indorse bacteriological examinations and heartily commend the work of those making investigations along this line in hospitals and under suitable conditions, it is a fact that the large majority of these cases to-day must be treated without these facilities and that promptly. Delay in many cases is exceedingly dangerous and would mean death if prompt and efficient treatment were withheld pending a bacteriological examination, even if the most approved facilities were at hand for carrying it out. Hence, I would say that if a safe, easy and reliable method of treatment can be found, we should all be prepared with it and use it as soon as demanded . Thus we will get the best results and save the most lives.

The uterus, the broad ligaments and the vagina are abundantly supplied with lymphatics, the circulation is most free, the rectum and sigmoid with their poisonous contents are in close proximity and the peritoneum is a most active absorbent, so that all of these poisons, of whatever variety, may when present be quickly passed into the lymphatics, the circulation and the peritoneum, producing results more or less speedily fatal, depending upon the variety and amount of infection, its point of contact and its dissemination, together with the degree of local and individual resistance to the infection.

It matters not whether we have a sapremia, which is "a febrile condition due to the introduction into the blood of the chemical products of putrefaction;" or a toxemia, "a condition of contamination or poisoning of the blood;" or a septicemia, "an infective disease caused by the absorption of the septic products;" or a pyemia, "which is septicemia, with the formation of secondary or embolic abscesses." We always have in sepsis following labor or abortion pathogenic micro-organisms or their products, the ptomains circulating in the blood and giving rise to the untoward symptoms; and, further, the absorption of these bacteria or their poisonous products always takes place from some portion of the genital tract which has been recently and specially denuded so that its absorbents may easily receive the poison.

For, while Von Eiselberg has demonstrated both streptococci and staphylococci in the blood of septic patients, Rosenbach has shown that bacterial invasion of the blood is not at all essential to sepsis and concludes rather that septic symptoms are due instead to the absorption of poisonous ferments and ptomains. It has been wisely said that those who believe in the germ theory of pathology believe that "zymotic diseases are due to the presence in the body of living organisms . . . and produce their morbid effects by their vital activity, and probably in large part by the formation of poisons called ptomains." A recent writer in a carefully-prepared article says, "The presence of a foul odor in the discharge would justify the careful use of the curette. A culture should then be made of the discharge and the cavity thoroughly injected with hot sterile water or salt solution. In the absence of foul discharge the curettage should be omitted, but the culture should be taken and the preliminary injection employed. After twenty-four hours the culture growth will demonstrate the nature of the infection. If other than saprophytic, the curette must not be used. Streptocococci are the most common and serious germs encountered in puerperal infection, but the same rule regarding the curette applies to others, such as the staphylococcus, gonococcus, colon bacillus, etc." I make this full quotation to condemn it for two special reasons. First, it is visionary and impractical at the present day in most cases. Second, if acted upon it would allow many women to die who might otherwise be cured by prompt and energetic treatment.

It should not be forgotten that whether the infection be by streptococcus, the staphylococcus, the colon bacillus, the gonococcus or saprophyte, death may result. True, some will produce that termination much more certainly and speedily than others; but since an immediate determination cannot be made as to what the outcome of the case will be if one temporizes, both scientific and humanitarian principles demand that prompt and as heroic treatment as safety will permit be at once instituted.

Lantas' article upon the treatment of abortion, approvingly cited in Gould's Year-Book, was a citation of 300 cases treated, of which twelve had fever and other evidences of sepsis. One case ended fatally. The treatment in all was to empty the uterus and cleanse with bichloride. In conclusion he says: "In all cases of septic infection complicating abortion, when either the whole or a part of the ovum is retained the uterus should be emptied as soon as possible and cleansed with bichloride solution. When septic infection persists after abortion, the total removal of the uterus, tubes and ovaries is indicated."

Vineberg says: "In every case of puerperal sepsis a thorough search for the original site of the infection, whether it be a wound of the perineum, vagina, or cervix, should be made, and, if found, it should be treated by surgical measures. . . . If by exclusion or otherwise, it is decided that the site is within the uterus, it should be subjected to a thorough curetting with the finger or preferably with the sharp curette." He claims that by this method of drainage and intrauterine irrigation 95 per cent. of the more serious types of puerperal sepsis will recover and that of the other 5 per cent. some will require opening the abdomen and most will require abdominal hysterectomy. To this view I cannot assent, but hold that rarely, if ever, in these acute cases are we justified in doing an abdominal section. Vaginal section is often indicated and vaginal hysterectomy may be required, but abdominal hysterectomy almost never.

Goffe says: "The question or even the propriety of hysterectomy for puerperal sepsis has yet to be determined, as there is no affection in which it is more difficult to lay down general principles of action." True, we are not always able to make a diagnosis in such cases, but it must be clear to every medical man that a uterus the walls of which are filled with abscesses or infiltrated with pathogenic germs, through and through, and in which the tubes, ovaries, and broad ligaments are badly involved, should be entirely removed as early and as completely as possible. By this treatment alone can any of these patients be cured and more will get well after the vaginal operation than after any other.

Given, then, a true case of sepsis, see that the bowels are emptied, the vulva cleansed, the vagina and uterus thoroughly emptied and cleansed of all infective material, and all pathogenic germs within reach removed or destroyed, and your patient will get well provided only that the system is able to cope with the germs and poison already in the circulation.

Now, how shall this be accomplished? By means of calomel and salts to open the bowels, an abundance of soap and hot water to cleanse the vulva, the finger, sharp curette, abundance of hot water and pure carbolic acid to sterilize the vagina and get rid of all infective material and pathogenic germs within reach. All remnants of placenta, infected blood-clots and sloughing tissue, whether in the uterus or in the wounded cervix or vagina, should be gently but thoroughly removed and these raw surfaces wherever found freely swabbed with pure carbolic acid, even covering the whole inside of the uterus with the pure acid if symptoms at all serious are present.

No packs or dressings should be allowed in either the uterus or the vagina, but free drainage should be secured. I am well aware that many object to the use of the sharp curette, and think it better generally to use nothing but the finger. A well-known writer says: "In the great majority of cases it is wiser thoroughly to curette the uterus, with the object of removing the whole of the decidua and retained products. There is no evidence that curettage, if done with every precaution, favors the spread of infection. In very virulent infection, early curetting, with the object of sterilizing the uterine cavity, affords the best chance of a successful result." I can heartily indorse these sentiments if you add the pure carbolic acid as a means of helping to secure complete sterilization of the uterine cavity. I am familiar with the fact that Bumm, the German pathologist, holds that under favorable conditions an inflammatory exudate is thrown out around the seat of invasion, which, aided by phagocytic action of the white corpuscles, prevents penetration of bacteria to adjacent tissue and the process is thus limited to a circumscribed area. Therefore Goffe and others teach that only in saprophytic infection should the curette be used, lest we break down Nature's wall of protection and open up these channels to more serious infection. But all admit that many times the bacteria break through this protecting wall and play havoc with the system. This fact must be patent to every physician. Else why give any treatment? Why do serious infections steadily and progressively grow worse? If Nature's barriers are sufficient to head off these most serious and virulent infections, why do patients thus afflicted persist in dying? And why is it that proper local treatment, even when it destroys these barriers, succeeds in saving lives and rescuing patients from the grave?

If you will but consider a moment the structure we are dealing with and remember that, in addition to blood-clots and remnants of infected placenta, we have, if the uterine cavity be infected by any pathogenic germs, a sloughing and infected lymphoid tissue which normally comes away in the lochia and which now remains a most favorable nidus for the multiplication of these pathogenic organisms, and this bed of poison cannot be adequately removed by the finger nor yet by the dull curette, you will readily perceive why it requires the proper use of the sharp curette. This with the sterilized douche carries away mechanically the most of the unhealthy microorganisms and their nidus. Having done this and in a like manner treated all other raw surfaces in the cervix, vagina and perineum, take a swab of cotton dipped in pure carbolic acid and apply freely to all of these raw surfaces, and you at once seal up all absorbents and destroy all remaining germs. This is heroic treatment, but if well done is absolutely safe and certain to stop further infection along any of these channels. Some object to the use of the pure acid, fearing either poisoning by it or too deep caustic effect, but if your wound surface is comparatively dry, so that the acid is not too much diluted by the secretions and blood or water, you get a superficial caustic effect and an albuminate is formed, sealing over the absorbents so that none of the acid passes into the circulation and no toxic effect can occur. Otherwise, the caustic effect is so superficial that no permanent damage can be done to the tissues, for no deep slough and no cicatrization or other serious changes take place in the deep structures. All of this is not mere theory, but actual fact which any one may observe in practice if he will take the pains to notice.

It seems strange that men who oppose the sharp curette in the graver forms of infection because, they say, you break down Nature's barriers and open up the parts to worse infection, and because, they say, paradoxical as it may seem, the infection has already entered the system and is beyond the reach of your curette or of your local antiseptics, should yet advise removal of uterus, tubes and ovaries, etc., by the vaginal or abdominal method. Why do all this and greatly increase the shock to your patient and render her less able to cope with the pathogenic germs already in the system? Such men will be compelled to answer that it is done with the idea of removing those parts which contain the point of invasion, together with the prolific bed of these organisms, the pathogenic germs and their ptomains, hoping thereby to remove mechanically so large a part of them that Nature, aided by the physician's internal medicines, may overcome those germs and their products which have already passed beyond the reach of his knife. I hold that this is their reasoning and it is sound. If sound and logical as well as scientific, why will not the same principles hold when I urge that, at a still earlier period in the case, before the infection is so deep or widespread, all of these raw surfaces, including the inside of the uterus, be curetted thoroughly with the sharp curette, all of the superficial surface, which is the point necessarily first infected, being removed, then all debris washed away with sterile water, and the germs and their pabulum with their ptomains carried away by flushing? Then, because there will still be left some bacteria, which it is well known cannot be carried away, pure carbolic acid should be freely used to destroy those that remain and quickly to seal up all absorbents against further invasion.

It is not claimed that the curette gets rid of all pathogenic germs; it carries away multitudes of them and the superficial structures which are already so full of them and their ptomains that Nature cannot get rid of them, and we should give her prompt assistance by removing all of that tissue which she can readily spare and which is now a source of constant and increasing infection. Neither is it claimed that the application of pure carbolic acid (95 per cent.) will follow these pathogenic germs into the circulation and destroy them there; but it is claimed that it destroys all within its reach, and those in a superficial layer still left by the curette. What I insist upon is that this treatment, employed early, is not only justifiable and safe, but is curative and will avert the necessity for a hysterectomy later. Let this become the prompt and universal early treatment and these patients will generally recover, no matter what the variety of the infection.

To summarize the treatment let me say:

1. Remove early with the finger, sharp curette and flushing all debris, decidua, blood-clots and sloughing tissue which may be infected, from the uterus and from all raw surfaces of cervix, vagina, and vulva.
2. Dry all of these raw surfaces and freely apply to them the 95 per cent. carbolic acid, washing away the surplus with sterile water.
3. Unless hemorrhage require, leave no tubes or packing of any kind in either vagina or uterus.

4. Have a simple carbolized, 2 per cent., vaginal douche used twice a day.

5. Open the bowels freely with calomel, ½ grain, every hour for four hours, to be followed by Rochelle salts until sufficient action has occurred.

6. Give quinine, 3 grains, every four hours, followed by tincture of the chloride of iron, 15 drops, in water.

7. Give good nourishment, with milk, eggs and stimulants every four hours.

8. Let this be the routine *early treatment.*

9. When fixation of the uterus occurs and infiltration takes place in Douglas' cul-de-sac or in the broad ligaments, or when the tubes or ovaries fill with pus in acute cases, open promptly and drain through the vagina.

10. If multiple abscesses occur in the uterine walls, if the walls become badly infected, or if necessary in order to secure perfect drainage for a badly-infected pelvic cavity, remove the uterus and all else necessary by the vaginal route.

THE ETIOLOGY OF PUERPERAL TOXEMIA.*

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FROM the earliest days of historic medicine, the majority of writers have felt that puerperal fever was primarily due to something in the blood. In 1762 Plenciz announced his belief in the doctrine of a special "seminum" for every disease. To Pasteur must be accorded the honor of being the first to prove that by the exclusion of micro-organisms from the human body infectious diseases can be prevented.

Synonyms.—Puerperal fever, childbed fever, milk fever, puerperal infection, etc.

Definition.—Puerperal toxemia arises when a specific pyogenic micro-organism, having gained admission to the body and having found the conditions favorable, grows and multiplies and in so doing elaborates a chemical poison which induces its characteristic effects. Thus, from an etiologic standpoint, we have for consideration (1) the *seed,* (2) the *soil,* (3) the *sower,* and (4) the *harvest.*

The Seed, Micro-Organisms.—By micro-organisms are meant minute living beings, some of which have the characteristics of animal life, others have those of the vegetable kingdom, and still others possess those of both, classified by Haeckel as protista. These organisms include the lower fungi, molds, yeast, bacteria and protozoa. Bacteria, for our present study, may be arranged as follows: (1) Saprophytes, refuse-eaters, harmless, useful, causing fermentation and putrefaction, thrive outside the living body. (2) Parasites, thrive within the living body as strict or obligatory *in toto* or capable of a dual life within or without the body. The basic forms multiply by division or fission, like producing like, as the sphere, coccus, rod, bacillus and spiral, spirillum. The characteristic arrangement is mono-, single cells or groups; diplo-, dividing in one plane, grouped in two halves; tetra-, dividing in two planes, grouped in fours; sarcina-, dividing in three planes, grouped in sets of eight; strepto-, adhering together forming chains; and staphylo-, adhering together forming grape-like bunches. They are also pathogenic or disease producing, pyogenic or pus producing, and toxicogenic or toxin producing.

Of all the bacteria capable of producing in the human body disease, pus, and toxins, the most common are the streptococcus pyogenes, staphylococcus pyogenes, gonococcus Neisseri and bacillus coli communis.

The Soil, the Genital Tract.—The conditions predisposing to infection are the postpartum conditions, which present every essential for the reception, rapid multiplication and absorption of bacteria and their products. These may be grouped as (*a*) traumatic abrasions, lacerations, denuded uterine surface with dead spaces, pressure points, relaxed structures resulting from the recently completed labor; these providing (*b*) the necessary chemical conditions, moisture, salts, and temperature, with coincident (*c*) physiologic hypertrophy of the lymphatic and venous system, and (*d*) exhaustion from muscular efforts, exposure and loss of blood; affording a soil thoroughly plowed, harrowed and watered for the reception of the seed, if, unfortunately, the sower appear.*

The Sower, Modes of Implanting Infection.—The carefully-conducted investigations of Thorn of the bacteriologic contents of pregnant women who have not been examined before labor, have shown that it is not right to conclude that the vagina and cervix of healthy women always contain bacteria which can at a moment's notice produce independently an active puerperal septicemia. Normally the cavity of the uterus contains no bacteria after childbirth, while the vagina and cervix harbor numerous saprophytic parasites that cannot spontaneously assume a toxic property. Rarely the vagina and cervix contain also pathogenic bacteria, the explanation of the presence of which is not easy; but this presence must be considered to be abnormal, and an explanation must be sought if one be not at hand. Bacteria occurring in the vagina under normal conditions are for the most part saprophytic, and also such as occur may upon favorable nutrient media produce toxic ptomains; or pathogenic bacteria occur in the vagina and cervix which are found to be of attenuated virulence; but it is also unquestionable that such bacteria may, under the conditions of childbirth, find a favorable medium for their development. But infectious and pathogenic bacteria find their way into the genital canal of healthy women only under abnormal conditions, and are undoubtedly brought there from other sources. "Of the twenty-nine examinations made by Steffeck, the staphylococcus pyogenes albus was found nine times, the staphylococcus pyogenes aureus three times and the streptococcus pyogenes once."

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*Read before the Section on Obstetrics and Gynecology, New York Academy of Medicine, 1901.

*"What can be more striking than the experiments of Phisalix," who shows that the very component cells of the body are as able and as apt to manufacture pathogenic toxins as the bacteria themselves? And Charrin (Poisons de l'Organisme, Paris, 1899) evidently believes that the main factor in contracting a disease of bacterial origin is the soil and that the agency which is most likely to create a favorable soil is that of auto-intoxication." (Med. Rev of Rev., May 25, 1899, page 340.)

The most common means of implanting pathogenic bacteria within the genital tract is by oft-repeated, antepartum, digital examinations, with hands which have not been rendered surgically clean, or by failure to wear sterile rubber gloves whenever there is any doubt as to one's ability to remove all traces of contact with doubtful cases—the one all-important duty of every accoucheur before, during and after labor. Next in order stands the use of unsterilized instruments, sutures, catheters, douche-nozzles or anything which may be introduced or brought in contact with the external or internal genitals. Failure to remove all hair from the vulva and to scrub thoroughly that region before applying forceps or inserting the hands or instruments prior to obstetric surgery, must compel the obstetrician to hold himself guilty if infection supervene. Many nurses when intrusted with catheterization and the administration of douches fail to cleanse thoroughly the vulva and separate widely the labia before inserting the nozzle, thus conveying bacteria within the vagina. Some nurses and midwives are also guilty of uncalled for inquisitiveness which they gratify by frequent digital examinations.

Stroganoff[2] is of the opinion that antepartum baths, as usually administered, are an element of danger, in that the water entering the vagina carries with it not only organisms from the skin of the patient herself, but also those adherent to the bathtub. In his own hospital he has substituted the application of soap lotion under a constant stream of water. Since the introduction of this method the mortality from sepsis has considerably diminished.

Sticher[3] has also been investigating this subject and has proved both by chemical and bacteriologic methods that water can enter the vagina as a result of a bath ordinarily administered. He says: "I put into the water of a bath an organism not met with in the vaginal secretion, the *bacillus prodigiosus,* and succeeded both in primiparæ and in multiparæ in proving the presence of this organism in the vaginal secretion when the patients had left the bath."

The Harvest, Puerperal Toxemia.—Having studied the exciting cause, the manner of implantation within the human body, and its habitat, we naturally turn to the consideration of the question, How do bacteria induce disease? According to Vaughn the phenomena which we designate infectious disease can be accounted for only on the so-called chemical theory of the action of bacteria and admits of several possibilities.

1. The bacterium may elaborate a soluble chemical ferment, which by its action on the animal body causes the symptoms of the disease and induces death. That many bacteria do produce soluble chemical ferments, some of which closely resemble specific toxins, has been demonstrated.

2. "The germ may, either by its direct action as a living ferment or indirectly through a soluble chemical ferment secreted by itself, split up some of the complex proteid constituents of the organism into simpler bodies, among which there may be poisonous substances. The action, according to this theory, would be similar to that by which the yeast-plant splits up the sugar molecules into carbonic acid gas and alcohol. . . . This theory of the cleavage action of the bacteria does not necessitate the supposition that the poisonous substances have been an integral part of the bacterial cells. It assumes that the bacteria have an analytical action upon the constituents of the animal tissues, splitting up complex bodies into those of simpler structure."[4]

3. "The bacteria may convert their food into poisonous substances. This conversion of inert into poisonous material may occur during the process of assimilation, *i.e.,* the content of the bacterial cell may be the active agent, or the conversion may occur during the process of elimination from the bacterial cell. That some of the pathogenic bacteria act synthetically or constructively in the elaboration of their specific poisons has been demonstrated."

1. *Bacterial Poisons, Ptomains.*—"A ptomain may be defined as an organic chemical compound, basic in character and formed by the action of bacteria on nitrogeneous matter. On account of their basic properties, in which they resemble vegetable alkaloids, ptomains may be called putrefactive or bacterial alkaloids. . . . The kind of ptomain formed depends upon the germ producing it, the material on which it grows, and the conditions under which it grows, such as temperature, the amount of oxygen present, and the stage of the growth reached."

"Poisonous action is not an essential property of ptomains. It is only necessary that the substance should be of bacterial origin and should be basic in its behavior toward acid in order to be classed in this group. Indeed, many of the ptomains so far isolated are not, when administered in single doses at least, poisonous. . . . Recent researches have demonstrated that the ptomain must be relegated to the less important bodies concerned in the production of the symptoms of disease."[5]

2. *Bacterial Toxins.*—All pathogenic bacteria that are harmful to man are toxicogenic; that is, they produce specific bacterial poisons now generally known as toxins. The investigations of Uschinsky demonstrate that the germ constructs its toxin, synthetically, out of bodies of less complex structure.

Bacteria produce toxins and set them free under widely different circumstances. In some there is found a poison adhering to their bodies, probably forming an integral part of their structure, only set free when the organism disintegrates. In the animal body they seem to find especially favorable conditions for their solution (Pfeiffer). Each cell contains in its interior a specific toxin, not destroyed by heat, dead bacteria retaining strongly toxic properties.

3. *Infectious Fever.*—Centanni isolated from saprophytic and pathogenic bacteria the pyrotogeneous agent, pyrotoxin, to which, in his opinion, the fever of infectious disease is due.[6]

Centanni, in particular, has given especial attention to infectious fever, and sums up his work as follows: "(*a*) The production of bacterial fevers is carried on by a general intoxication with a poison (pyrotoxina bacterica) which has its origin in the interior of the bacterial cells themselves and differs in its properties from the as yet better known bacterial poisons (ptomains, enzymes, toxalbumins). (*b*) This poison is widely distributed and common to all bacteria, so that it is found in non-pathogenic as well as in the pathogenic varieties, and always with the same proportions."[7]

Puerperal Endometritis.—"Endometritis is the result of infection with pathogenic micro-organisms which are carried into the puerperal uterus during the puerperal state."[8] Doderlein says: "The hitherto general belief that inflammations of the uterus are divided into metritis and endometritis can no longer be considered correct, since it has always been shown that the uterus is always diseased *in toto.*"[9]

"The pyogenic form is most common in the puerperæ. The streptococcus pyogenes is nearly always the active agent, though staphylococci, gonococci, and the bacterium coli commune may be the etiologic factors."[10] This statement has been amply confirmed by Kroenig's study of 179 cases of puerperal endometritis which he places in three groups: (*a*) Pyogenic form, due to streptococcus pyogenes, seventy-four cases; due to staphylococcus pyogenes aureus, four cases. (*b*) Gonorrheal form, fifty cases. (*c*) Putrid form, due to saprophytic bacteria, fifty cases. The important point arrived at from this series is that in all of the six fatal cases infection was due to the streptococci. In some of the cases the infection appeared to be of the mixed form.[11]

Menge and Kroenig[12] found that there are several varieties of streptococci, resembling one another in size, shape and facility in staining, but which in culture, growth, and resisting power to the oxygen of the atmosphere show marked differences. Some are of the first class and highly virulent; others are sometimes found as saprophytes in the vaginal secretion. Both varieties have been found in the connective tissue of the human body in purulent parametritis and in the local secretion from the uterus.

Conditions Inimical to Infection.

The study of the life history of bacteria within the human genital tracts leads one to recognize that there are many things to contend with.

1. *Vaginal Bacillus.*—Doderlein isolated from the vaginal secretion of pregnant women a special organism which he claims is the chief defender of the genital tract against bacterial invasion, exerting a powerful germicidal action on pathogenic organisms; he attributes the liability to puerperal infection as due to their being washed away by the liquor amnii; and Menge has shown that with the exception of the gonococcus, bacteria cannot remain for any length of time in the genital tract. Williams[13] twice found the staphylococcus albus and occasionally the gonococcus in the vaginal secretion from ninety-two pregnant women.

2. *Symbiosis and Enantiobiosis.*—Among all bacteria there are those which assist or oppose one another mutually or one-sidedly. Some thrive best and most virulently when associated with another species; attenuated bacteria regain their former virulence when associated with certain saprophytes, the one producing conditions or materials which favor or oppose the development of the other.

3. *Oxygen.*—The relation of bacteria to oxygen is very important, and leads Liborious to distinguish three classes: (*a*) Obligatory anaerobes, growing only when oxygen is completely excluded. (*b*) Obligatory aerobes, which grow only when oxygen is freely supplied. (*c*) Facultative anaerobes, which thrive best in the presence of free air, but nevertheless are capable of growing, although more slowly, in its complete absence; this capacity is, however, very variable. The greater number of pathogenic forms are found in this class.

4. *Temperature.*—Bacteria adapt themselves to the temperature of their surroundings and exhibit the three cardinal points, minimum, optimum, and maximum, common to all living organisms. Pathogenic forms require temperatures approaching that of warm-blooded animals to promote an abundant growth. At the minimal temperatures, at which growth is slight, the metabolism is much depressed, while at the maximum temperatures inhibitory effects are noticed, only slowly recovered from after a return to optimal temperatures. MacFeyden and Roland[14] exposed bacteria for seven days in hermetically sealed tubes of liquid air, at 190° C.; there was no alteration in structure and no change in their virulence except that they grew a trifle more slowly.

5. *The Size of the Dose.*—Cheyne, the first to call attention to the importance of the size of the dose, demonstrated that "a pure culture of pyogenic bacillus, injected subcutaneously in a rabbit in a dose of $^1/_{10}$ c.c. produced death in from twenty-four to thirty-six hours; the blood and organs contained very few bacilli. It is therefore probable that in animals rapid death following injections of large amounts of this bacterium (proteus vulgaris) is due to the absorption of some toxic material secreted by it. If smaller doses ($^1/_{40}$ c.c.) be used, the result is an abscess of slow formation to which the animal succumbs generally at the end of from six to eight weeks; in still smaller doses, the abscess is still more slow, and the animal ultimately recovers; finally, no effect

whatever is produced by the use of extremely small doses."[15]

6. *Salutary Fever and Leucocytosis.*—Discussing the effects of fever, Ernst[16] says that of all the symptoms of acute infectious diseases, fever is the most constant, yet we are almost wholly ignorant of its mode of production and of its influence upon the course of these diseases. At the present time the immediate practical importance of this question is very great, since so large a part of the treatment of these diseases consists in combating the fever which is so constantly present. The fallacy of such treatment is apparent in view of the conclusions of Loewy and Richter that fever and leucocytosis should be regarded as of assistance to the body in combating the effects of infection, and they suggest that therapeutic benefit may be derived from the use of means tending to increase these conditions instead of from those antagonizing them.

Blumreich and Jacoby[17] personally extirpated the spleen from 200 guinea-pigs and noted immediately thereafter considerable leucocytosis, leading to an increased bactericidal action of the blood and to an increased resistance against infection; the spleenless guinea-pigs lived much longer than the other animals which had been inoculated with the same toxins.

7. *Phagocytosis.*—Phagocytosis is the swallowing or incorporating of foreign particles by certain of the leucocytes, capable of ameboid movement, which are called phagocytes. The attraction which draws the animal cell to the vegetable cell is called chemotaxis. "Phagocytosis is almost universal in the micro-organismal diseases at some stage or other. At the edge of an erysipelatous patch a most active warfare is being waged between the streptococci and the cells. Near the center of the patch there are many free streptococci and a few cells; nearer the margin there are free streptococci and also a great many streptococci enclosed in cells (leucocytes) which are for the most part dead. Farther out we find a host of active living cells engaged in eating up their enemies as fast as they can. The phagocytosis proves that at the center the bacteria are fortified, actively growing and virulent. In the next zone the leucocytes (phagocytes) that have feasted upon the bacteria are poisoned by them. Outside, the cells which are more powerful and which are constantly being reinforced are waging successful warfare against the streptococci. In this manner the battle contiues.

The organisms which are seized upon by the leucocytes do not remain in the blood, but are collected in the spleen and lymphatic glands; and not the least important fact in favor of phagocytosis is that observed by Bardach, that excision of the spleen diminishes (secondarily) the resistance to infectious diseases.

"When the dose of toxin produced overpasses a certain limit the phagocytes draw off and leave the field free to the microbe for its multiplication."[19]

8. *Bacteritic Antitoxins.*—"A characteristic of all toxins is the capacity to induce the formation of antitoxins, according to Behring's law, which holds that the introduction of such toxins in suitable doses is followed by the evolution of their specific antitoxin; and, further, that by repeated and continued inoculations this active immunity can be brought to a high degree of perfection."[20]

9. *Immunity.*—Among the properties of the blood serum and other animal fluids is a well-marked bactericidal action which plays an important part in the acquirement of immunity. According to the work of Behring, Kitasato and others, immunity is due to the presence of albuminoid substances, to which Hankin has applied the name *defensive proteids,* having the power of killing pathogenic bacteria, of attenuating them, and of destroying their toxic products. The recognition of these facts leads Hericout and Reichert to attempt artificial immunity and has resulted in what is now known as *serumtherapy,* with all its vast results and possibilities.

10. *Endothelial Destruction.* — Wyssokowitch found that saprophytic micro-organisms collect in the small capillaries where the blood-stream is slow, and where they are taken up by the endothelial cells. Wyssokowitch found them most numerous in the liver, spleen and bone-marrow, and found that in these situations they destroyed the saprophytic organisms in a few hours, and the pathogenic in from twenty-four to forty-eight hours.

Conclusions.

Puerperal toxemia is due to the implantation of pyogenic bacteria within the genital tract before, during or after labor, in which they find a well-tilled soil, of the right temperature, moistened with the necessary saline fluid, upon which they thrive and, multiplying, living or dead produce chemical substances (toxins) which, when absorbed into the system, induce the condition known as toxemia and give rise to the symptom-complex designated sapremia and septicemia.

The introduction of micro-organisms is in the larger proportion of cases (barring gonococcic cases) an avoidable offence.

Unfortunately, infection from external sources is not rare; therefore it is the imperative duty of nurse, student, and physician, when in charge of a pregnant or puerperal woman to conscientiously practise asepsis.

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MEDICAL PROGRESS.

OBSTETRICS AND GYNECOLOGY.

Auto-intoxication in Pregnancy.—The relation between uremia and eclampsia has long been recognized, but of later years the theory has been advanced that many other disturbances occurring in pregnancy are due to auto-intoxication. A. BARONE (Archiv. d. Ostet. e Gin., Year IX., No. 2, 1902) discusses this question under the following heads: (1) Does normal pregnancy cause a superproduction of toxins or special toxins? and (2) What is the condition of the defensive organs in pregnancy? He maintains that during gestation there is stagnation of alimentary substances and that the liver, under the unusual conditions, does not functionate adequately; consequently putrefaction of alimentary albumins occurs, with an outpouring of their toxic products into the circulation. Pinard is quoted as stating that the absence of menstruation constitutes a retention of organic secretion which necessitates an absolute integrity of the other secretions and functions; the author holding that suppression of the menses plays an important part in the toxemia of pregnancy. The fourth potent cause of toxemia is considered to be the blood; its decreased oxygen-bearing power leading to incomplete combustion of decomposition products. Upon the liver and kidneys especially falls the burden of counteracting this hypertoxic condition, the rôle of the former being neutralization of toxic products; of the latter elimination of non-neutralized toxic substances; but too often their functions are impaired by the noxious effect of the blood upon their parenchyma through decreased nutrition, and through modifications in the endo-abdominal circulation; a condition of hepato-intoxication resulting, and giving rise to headache, somnolence, general pruritus, uncontrollable vomiting, etc., or evidence of kidney disease showing itself.

Primary Fetal Variola.—A question which from its gravity has long attracted the attention of students and which cannot as yet be regarded as solved, is that of the influence of variola upon pregnancy. The most frequent result of the disease in the pregnant woman seems to be abortion or premature delivery; in a certain proportion of cases the fetus showing evidence of infection, in other instances absence of variolous marking. In an extremely limited number of cases, variola has developed in the fetus, the mother showing absolutely no evidence of the disease. G. JACONTINI (La Riforma Medica, Mch. 14 and 15, 1902) contributes to the literature of this subject a paper dealing with such a case observed in his personal practice. The child was stillborn at term, the entire body being covered with variolous eruption in the pustular stage. Although the mother had been exposed to the disease there was no manifestation of contagion in her person before or after parturition and pregnancy followed a perfectly normal course. The author feels that this case justifies the belief that a condition of relative immunity to a given infection may exist in a woman while the less resistant organism of the fetus may succumb to the influence of noxious substances circulating in the maternal blood.

Ventrofixation and Subsequent Pregnancy.—Cases of unfortunate complications arising from pregnancy following ventral fixation lead J. C. CAMERON and F. A. L. LOCKHART (Jour. of Obstet. and Gyn. of the Brit. Empire, Mch., 1902) to report the course of a labor in such a condition. The uterus was bound firmly to the abdominal wall and was thereby prevented from driving the head downward into the pelvic cavity. As the anterior wall could not contract so freely as the posterior wall of the uterus the pressure was downward and forward, forcing the head against the pubes. The anterior parietal bone was arrested, and the posterior parietal glided into the pelvic cavity. This constituted an exaggerated and persistent Litzmann obliquity. After the most violent uterine action had failed to accomplish anything, a single backward pull was made with the forceps and the head at once slipped into the pelvic cavity. In a similar case the authors think that it would be wiser to induce labor at the end of the eighth month, when the head would be smaller, softer, and more easily molded.

Puerperal Insanity.—Those who have studied the reproductive life of women admit that gestation is attended by much nervous disturbances in many, and some nervous disturbance in all; the intimate sympathetic connection of the mammæ with the gravid uterus gives rise in normal persons to various forms of neuralgia, headache, etc., whereas in highly susceptible persons these changes of disposition and character become so marked that irritability, fractiousness, and despondency may and do amount to actual insanity, writes ROBERT JONES (Brit. Med. Jour., Mch. 8 and 15, 1902). From the author's statistics, gathered in the London County Asylum, Claybury, it would seem that the pregnant condition renders woman less liable to insanity than during any other period of her life. In this institution the number of cases admitted would show that puerperal insanity develops in about one case in every seven hundred confinements. According to the English Lunacy Commission for 1900, the actual insanity including this variety, during the reproductive life, shows a percentage of admissions to institutions varying from 7.2 per cent. in the better classes to 8.41 per cent. in the poorer classes. The Annual Report of the Asylums of London for the same year shows 120 puerperal cases in 2,600 female patients admitted, which is less than 5 per cent., but a large number of this total were transfers of chronic cases from other asylums. During this year there were 132,652 births in London, which would give an approximate ratio of one case of puerperal insanity to every 1,100 births. The usual divisions of the disease in its classification is as follows: (1) Insanity which occurs during pregnancy; (2) that which occurs from the date of parturition to six weeks after confinement; (3) lactation insanity occurring six weeks after confinement. The author does not think there is a particular type associated with either pregnancy or lactation, but with parturition and the period immediately succeeding, the insanity presents such a marked delirium with wildness and delusions of a hallucinatory character, in which religious and erotic features become so prominent that one can recognize an almost distinct nosological entity. Twenty-five per cent. of 56 cases of primiparæ exhibited puerperal insanity, and 78 per cent. of these were unmarried women. Insanity is more common when the child is of the male sex. In the puerperal cases, more suffered from mania than melancholia, and, again, more from the acute form of mania than the same of melancholia. Of 120 cases only one was epileptic. On the other hand, in the 83 lactation cases, a greater proportion suffered from the depressed than from the exalted variety of insanity. Gradual onset characterizes the advent of melancholia twice as often as mania and the gradual onset more often terminates in dementia. In melancholia cases, before admission to the institutions there is more of a tendency to wander away from home. Of 259 cases 129, or nearly 50 per cent., had some hereditary predisposition, either physically or mentally, and this included direct and collateral insanity, epilepsy, suicide, intemperance, phthisis, etc. The lactation variety occurs most often between the ages of thirty and thirty-four—

a fact which supports the view of exhaustion as an etiologic factor. The insanity of pregnancy and of the puerperium is oftenest met with between the ages of twenty-five and twenty-nine. Authorities consider this form of insanity the most recoverable. As to prognosis of the different types that occurring in early pregnancy is favorable; that occurring later is apt to continue in an exaggerated degree until after confinement and during the puerperal period and afterward become chronic; most of the puerperal cases get well rapidly. Insanity during lactation has a tendency to recover, but warning must be sounded against the risk of low forms of inflammatory diseases indicating a general want of recuperative power and a low state of nutritive tone. Albuminuria is not common, but when present gives a grave prognosis. Clouston stated that the insanity of pregnancy rarely passes off before confinement. The death-rate is highest in the insanity of pregnancy and lowest in the puerperal cases. Treatment has no direct effect upon the disordered mind. The treatment of disorders during this physiological period must depend upon whether the stage be (1) that of pregnancy, (2) that of childbirth, or (3) that of the puerperium. In general the pregnant woman should have a light dietary, gentle exercises, bright surroundings, attention to the bowels by mild saline aperients, and sleep by mild hypnotics, such as chloral and bromides in combination. In the puerperal form, the woman should be sent away from home. The wet pack is recommended for the mania. Alcoholic stimulants are absolutely necessary. Sleeplessness should be combated by chloral and bromides. Paraldehyde is satisfactory. The return of the menses may be looked upon as a forerunner of permanent mental improvement and means to encourage this should not be omitted.

EYE, EAR, NOSE, AND THROAT.

The Papilla in Otogenous Brain Disease.—Conscientious examination of the background of the eye conducted by O. Korner (Deutsch. Arch. f. klin. Med., Vol. 73) shows that in intracranial suppuration following ear disease, neuritis or choked disk is rare, unless a combination of suppurative foci exist. From a prognostic point of view, changes in the papilla are of no value. As a rule there is a distinct retrogression of the inflammation several days after the pus has been evacuated. But even if it should persist or increase, the outlook is no less favorable.

Cauterization of the Cornea.—If the enucleation of the globe of the eye does not always impose itself in cases of hydrophthalmia, there are nevertheless pathological conditions causing increase in the volume of the eye which might be called congenital hydrophthalmia, and cases of staphyloma which necessitate other bloody interventions, such as iridectomy, with or without extraction of the crystalline lens, and amputations of the anterior segment of the ball. Since these amputations do not always give satisfactory results and sometimes expose the patient to sympathetic ophthalmia and always necessitate the use of a glass eye, Dianoux (La Sem. Méd., Mch. 19, 1902) conceived the idea of substituting for them a procedure void of all these inconveniences and more easily accepted by the general average of the diseases and the patients. It consists in brief of decreasing the volume of the eyeball by operating only upon the cornea with the sole means of a thermocautery. He makes at first a superficial cauterization with the instrument at dull-red heat, tracing a star, the rays of which begin a little away from the edge and converge toward the center of the cornea, varying in number naturally according to the surface he desires to treat and usually leaving intervals about 1 millimeter wide in order to avoid necrosis. These primary cauterizations are followed by a second set which are placed over them, but extend more deeply through several layers of the cornea; then at the center a circle is traced about 2 millimeters in diameter and more if the dilatation be considerable; then if the point of the cautery increase suddenly to an active red heat this center is perforated and permits the aqueous humor to escape. The final step consists in powdering the cornea with bismuth and placing a pressure bandage over the eye, to be renewed after three days and thereafter morning and evening, after irrigation with boiled water and the instillation of a few drops of eserine and cocaine. In cases in which the volume of the eye is excessive three months after the operation, he repeats the procedure and insures, if necessary, the emptying of the anterior chamber continuously for several days by introducing an open stylet into the center. If the tension be still increased, he practises massage of the eye. It is necessary not to reduce too much such enlargements of the globe for fear of final atrophy. This intervention has much in its favor and is highly recommended by the author.

Simple Test for Equilibrity of Eye Muscles.—Many cases of headache and neuralgia coming to the general practitioner are dependent upon a slight and unnoticeable lack of equilibrium of the muscles of the eye. In order to determine whether or not there is any such defect and whether or not an oculist's opinion is necessary a very simple method is proposed by F. C. Riley (Med. Rec., Mch. 22, 1902). A homeopathic medicine vial is filled with water or, preferably, with a red liquid and surrounded by a piece of paper, upon both sides of which an oblong opening has been left, the openings being opposite one another. Hold the vial in front of one eye and the distorted image of the candle flame, due to the cylindrical shape of the vial, passes horizontally to and fro as the vial is moved laterally. Provided the red band passes through the middle of the candle flame as the vial is moved from right to left, it shows that the eyes act harmoniously in the vertical plane. The vial may then be turned horizontally and moved up and down, when lateral deviations of the two lights should be noted. If the red line pass through the candle flame, lateral equilibrium exists.

Posterior Ulcer of the Cornea.—It is admitted generally that ulcer of the cornea begins in the anterior layers and that accumulation of pus in the anterior chamber is only the consequence of the destructive process. In studying the pathological anatomy of purulent keratitis, Elschnig arrives on the contrary at the conclusion that if there exist a relation of cause and effect between these two symptoms, it is not the ulceration but the hypopyon which is the primitive factor. The poison of the pus contained in the anterior chamber brings about an alteration of the epithelial cells of the membrane of Descemet, and thereafter determines a loss of substance of the posterior surface of the cornea. This conception, based exclusively on the anatomical considerations, is warranted by clinical findings in two cases observed and reported by S. Klein of Vienna (La Sem. Méd., Mch. 19, 1902). In these there was an ulcer on the posterior surface of the cornea without the least possible ulceration of the anterior surface. It therefore goes without saying that the ordinary means of treatment habitually employed against ulcer of the cornea, like instillations of atropine and cocaine, antiseptic washes, insufflation of iodoform, cauterization, etc., cannot possibly reach the lesion if it be situated on the posterior surface. The keratotomy of Saemisch, which is usually employed as a last resource, is directly and immediately imposed by this condition. If the pus be once evacuated, it is necessary to keep the wound open to drain away any which may collect. If the suppuration stop cicatrization will rapidly occur. Klein has added faradization to the operation of Saemisch in order to quiet pain which sometimes persists notwithstanding the paracentesis of the cornea, and has met with success.

MEDICINE.

Rubella and the "Fourth Disease."—The assumption that rubella includes in its name more than one disease and that the two well-known types are really quite distinct affections would lead to even greater difficulty of diagnosis between rubella and scarlatina and measles than has heretofore existed. J. P. C. GRIFFITH (Phil. Med. Jour., Apr. 12, 1902) argues against the adoption of a "fourth disease" and adheres to the idea of extreme variations from one type, which have been called rubella scarlatiniforme and rubella morbiliforme. In a typical case of one form the spots are the size of a split pea, have the purplish red tint characteristic of measles, are grouped and slightly elevated. In the other form the rash is confluent or in patches, not elevated, and produces a general redness simulating scarlet fever. Midway between these types comes the ordinary rubella with characteristic rose pink spots. The author observed an epidemic in a home for children in which the general symptoms of all the cases were the same, yet the patients presented all the varieties of the eruptions just enumerated, some of which, had they been observed in isolated cases, would have been diagnosed as measles or scarlatina. The writer believes that rubella, as well as the other infectious disease, is liable to variations in type, both in the individual and in epidemics, and that aberrant cases and forms and even aberrant epidemics arise. A new name should not be applied to each. The most important evidence of the existence of a fourth disease is still lacking in that the occurrence of rubella scarlatiniforme will fail to protect from an attack of rubella morbiliforme and *vice versa*.

Combating Meteorism.—It is usually observed in death from peritonitis or intestinal obstruction that the pulse can no longer be felt, although respiration appears to remain fairly strong. The mechanical influence on the heart action in such conditions has been made a subject for animal experiment by A. OPPENHEIM (Deut. med. Woch., Mch. 27, 1902). An artificial tympanites was caused by inflating the gut with air through the rectum in rabbits. If unrelieved death occurred in a few minutes. When an artificial anus was made, relief was almost immediate. In this animal a hypodermic of physostigmine salicylate, gr. $^1/_{20}$, was followed by marked peristalsis with discharge of gas and feces. Further experiments were made and smaller doses of physostigmine given, from which it was definitely determined that the respiratory center is not involved in this phenomenon and that breathing continues even after the heart beats can no longer be demonstrated. Although of apparently great value as a peristalticum, the action of physostigmine is too uncertain individually to warrant at present its more extended use. Atropine was also injected, but although increasing doses up to one gram were given, little reaction was observed. The author believes that physostigmine cannot be given when marked tympanites has existed for some time and when the smooth muscles have become completely atonic from stretching. In his experiments the author found that the effects were noted only after the gut had become relaxed by creating an artificial anus and believes that this indicates a method to be pursued in severe or practically hopeless cases.

Syphilitic Stenosis of the Small Intestine.—Stenosis of the small intestine due to the healing and contraction of syphilitic ulcers is not a common occurrence. Strictures due to this cause or following the ulcerations of dysentery are more likely to take place in the lower bowel, whereas those occurring in the small intestine are more commonly ascribed to tuberculous ulceration. Two cases of syphilitic stenosis are described by F. ROSENFELD (Berl. klin. Woch., Apl. 7, 1902). In the first instance an operation was performed for chronic obstruction and the patient was discharged cured after a resection of the jejunum and end-to-end anastomosis. Microscopical examination of the resected gut was reported to show "typical small-celled luetic infiltration of the intestinal wall with stenosis." A preoperative diagnosis could not well be made in this case on account of the age of the patient (forty-six), although the constant absence of pus and blood, both from the stomach-contents and from the dejections, spoke against carcinoma. In the second case described by Rosenfeld, the family history, the loss of weight and the history of a previous pleuritis suggested tuberculous ulcer with stenosis. In view of a history of syphilitic infection of seven years' standing the diagnosis of lues of the intestine was made and specific treatment was at once begun. A tumor had been felt to the right of the umbilicus; this rapidly diminished in size and in a few months disappeared. The inference from these two cases is that it is worth while to consider lues in every case of chronic stenosis of the intestine, and a syphilitic history is especially to be sought when stenosis occurs in a youthful individual and when tuberculosis can be ruled out.

Clinical Aspects of Hepatic Insufficiency.—Moderate degrees of hepatic insufficiency are associated with atrophic cirrhosis, fatty and amyloid degeneration, cardiac liver, secondary hepatic cancer, biliary infection, appendicitis, and a large number of digestive infections and intoxications. Signs of exaggeration of hepatic function may be present in hypertrophic (biliary) cirrhosis, in primitive carcinoma of the liver, in simple acholuric icterus. Certain forms of hepatic insufficiency tend to individualize themselves. These are discussed by DUCAMP (Gaz. Hebdom. de Méd. et de Chir., Apr. 6, 1902). During an attack of intermittent fever of biliary obstruction the liver loses temporarily at least part of its power to transform into urea the nitrogenous products with which it is supplied. In hepatic troubles, in which a diminution of urea-production takes place, the diuretic action of urea is wanting and a notable falling off in the quantity of urine eliminated is the result. In advanced hepatic cirrhosis Bouchard has shown that a veritable anuria is approximated. The symptoms of renal alteration resulting from hepatic insufficiency include albuminuria, hyaline and granular casts, diminution of urinary toxicity, retardation of the elimination of methylene blue. Glycosuria, due to hepatic insufficiency, may at first be present only after the evening meal. When the condition is more advanced glycosuria is constant, but is exaggerated during the hours directly following the ingestion of food. When glycosuria is really due to hepatic insufficiency it is accompanied by diminution in nitrogen elimination, by urobilinuria, and by indicanuria. Incidentally there may be gingivitis, impotence, neuralgia, cutaneous lesions, cataract—all associated with the diabetes. In these cases hepatic extract is rational medication, and its administration restores the urea elimination to its normal level and tends to abolish the glycosuria.

Latent Pneumonia.—The causes of sudden death, which are of such enormous importance from the standpoint of medical jurisprudence, comprise a considerable number of the acute diseases. Of these the first in point of importance is pneumonia, which, according to LITTLEJOHN (Edin. Med. Jour., Apr., 1902), sometimes first betrays its presence by causing a sudden and rapidly fatal collapse. He gives a detailed analysis of thirty-three cases of true latent pneumonia in which he performed autopsies in person. All of the cases had certain characters in common, demarking a definite type of the disease. The disease was practically unsuspected during life. At most, the patients complained of a slight indisposition, sometimes of shortness of breath, pain in the side, etc., but never sufficiently to excite alarm or to demand medical interference. Death occurred suddenly, or followed within an hour or two after the appearance of serious symptoms. In several instances it took place during the night in bed, in others during the day, on the street, or at home, and in the latter case it was frequently the apparent result of some slight exertion. The pathology of the disease is fairly typical. It is apt to be well advanced, the lung, in the majority of instances, being in a state of grey hepatization. Its distribution is generally basal and lobar. The apical form is rarely latent throughout. It may be latent even though involving the whole of one lung, or a considerable portion of both lungs. Latent pneumonia is most common in the male sex and after the age of forty. It is practically confined to persons addicted to excessive alcoholic intemperance. The explanation of latency is to be found in the quantity of alcohol consumed after the onset of the disease—first, in masking the ordinary signs and symptoms by dulling sensibility; second, by its stimulating effects, enabling the person to go about until he suddenly collapses and dies.

Desquamation in Scarlet Fever and Infection.—The old view has been that when the skin peels in scarlet fever it carries with it the means of infection. C. K. Millard (Lancet, Apr. 5, 1902) addressed to the members of various hospitals for infectious diseases throughout Britain, a circular letter with the following inquiries, with a view to tabulating the opinions given in the answers: (1) Can you adduce any evidence experimental, statistical or clinical, tending to prove that desquamating epithelium is *per se* a source of infection? (2) Do you consider that too much importance has in the past been attached to desquamation as a source of infection? (3) Does your experience support the popular belief that desquamation after scarlet fever is necessarily an indication that the patient is still infectious? (4) Does your experience lead you to believe that a patient may continue to desquamate, especially on the feet, before and sometimes after he has ceased to be infectious? (5) Does your experience lead you to believe that it is necessary in order to prevent the spread of infection that patients, who are otherwise ready to leave the hospital, should be detained there until every visible trace of desquamating epithelium has disappeared? Twenty-one of the twenty-five letters sent out were answered with the following results. The replies were divided into two groups, those taking the new view and those adhering to the old or occupying an intermediate position. Sixteen of the authorities answered the first question negatively, the second positively, the third negatively, the fourth positively and the fifth negatively. In the group of such authorities as adhered to the old or intermediate view much less uniformity is possible. Unfortunately, the question as to whether or not the epithelium when desquamating contains the infecting element cannot be answered until further advances have been made in bacteriological research. It is certain that in small products the groups do contain the germ, but in scarlet fever the eruption is an erythema, a process characteristic of chemical poisoning or of poisoning by the chemical products of microbic action rather than by the direct action of the microbes themselves. The author's own experiments have not been very extensive, but are suggestive. In Leicester from September 14th to December 14, 1901, he reduced the minimum stay in the hospital for scarlet-fever patients to four weeks. The total cases sent out were 190 and the return cases directly attributable to them were only 5. Of the cases which caused the infection of these 5 return cases, 4 had discharge from the nose and 1 an unhealed crack behind the ear. In addition the third case was still desquamating at the feet. None of the other patients were desquamating. At least, as far as this record goes, it seems likely that these chronic discharges were more probably the source of infection than were the scales of the skin as they were shed. Whether or not this will in time prove to be scientifically the whole truth remains to be seen. Meanwhile, the author agrees that it would probably be unwise to disabuse the public of the old idea that the skin does convey the poison, because otherwise many scarlet-fever patients would be turned loose among their comrades ten to fourteen days after the onset of the disease, because, if the disease had been of a mild type, they would be physically able to go about.

Antityphoid Inoculation.—A report from Lieutenant J. W. West in South Africa, concerning recent statistics in typhoid fever of antityphoid inoculation among the soldiers in South Africa, is published by A. E. Wright (Lancet, Apr. 2, 1902). Briefly, the summary is as follows: In a regiment of 747 men and officers, 547 were uninoculated; 23 cases, or 4.2 per cent.; 7 deaths, or 1.3 per cent. of the whole, or 1 in 3.3 of those stricken. The inoculated were 200; 3 cases, or 1.5 per cent., with no deaths whatever. If one adds this admirable record to similar ones already in hand, it is plain that the promises of antityphoid serum are rapidly being fulfilled.

Serum in Scarlet Fever.—Since the discovery of antidiphtheritic serum a number of experiments have been attempted, often with little success, to apply the same principle of progressive immunization to various animals by means of cultures or toxins of microbic origin with the view of obtaining curative serums for other infectious maladies, such as cholera, smallpox, typhoid fever, etc. The eruptive fevers and in particular scarlet fever have not lent themselves to these researches, because the agents producing them are not very fully known, but as a first attempt to answer the general question of immunization in these allied diseases, it has been asked, whether the serum from the blood of subjects recently cured of scarlet fever, for example, might not be capable of exercising favorable influence against this disease? Weisbecker (La Sem. Méd., Mch. 26, 1902) has shown that such injections seem to make the patients feel better, but do not have a very definite effect upon the various other symptoms, such as the fever and local signs. The results were, in short, somewhat contradictory. E. von Leyden, O. Huber, F. Blumenthal have also carried out a similar series of experiments. Von Leyden injected only 10 cubic centimeters of serum from convalescents, and later 20 cubic centimeters without ever seeing any bad symptoms. He estimates, furthermore, that with advantage this dose may be increased. It goes without saying that it is of the highest importance to be certain that the subject furnishing the serum is exempt from various diseases. This serumtherapy was applied in about 16 cases. One of them was a woman, who after an abortion suffered also from scarlet fever. In her case the result was remarkable. In 15 other patients, 6 gave positive and 9 doubtful results after treatment. Von Leyden thinks that his experiments have proved great possibilities for this form of treatment.

Treatment of a Case of Meniere's Disease.—A case of Menière's disease which came under the observation of J. GESCHEIT (Berl. klin. Woch., Apl. 7, 1902) occurred in a patient, forty-eight years of age. Four years ago the patient had fallen unconscious on the street and had vomited. After this attack he experienced a buzzing in the left ear and dizziness, and there was some loss of hearing on the left side. Attacks became more and more frequent, occurring four or five times a day. Hearing on the left side became more and more impaired until it was almost entirely gone. There were no convulsions at the time of the attack or at any other time. The patient felt as if he would fall to the left and to prevent this seized hold of some stationary object to protect himself. Syphilis was denied; a history of moderate alcoholism was obtained. Examination showed that the right ear was normal. The left ear heard the Politzer acumeter at a distance of ten centimeters, a whisper at one-half meter, the tick of a watch close to the ear; the tuning-fork placed on the skull in the median line was heard distinctly with the right ear, very poorly with the left. The left ear was very sensitive to the galvanic current; a current of two or three milliamperes produced, according to the patient, a tone resembling the sound of a tuning-fork. Application of the anode was not followed by any visible inclination of the head toward that side, nor was the application of the cathode followed by bending of the head away from the cathode. The passage of a galvanic current for one or two seconds caused the patient to feel dizzy. After unsuccessfully trying potassium iodide, iodipin and quinine, the galvanic current was resorted to. The positive electrode was placed over the tragus on the affected side, the negative pole over the cervical spine; a current of three or four milliamperes was used every second day. After twenty-five sittings the patient ceased to experience dizziness. Tinnitus was still present, but in a much milder form, and hearing was vastly improved. The acumeter could now be heard at a distance of half a meter.

PHYSIOLOGY.

Glycosuria and Narcosis.—The modern investigations on the pathogenesis of diabetes mellitus cannot fail to be strengthened by the study of those metabolic disturbances occasioned by the administration of certain drugs and resulting in a transient glycosuria. A very suggestive line of research was that undertaken by E. BENDIX (C'tlblt. für Stoffwechsel und Verdauungs Krankheiten, Mch., 1902) on the relation between certain drug-narcoses and alimentary glycosuria. A recently published case of W. Ebstein was that of a rather obese diabetic woman who, as the result of a regulated diet, improved to such an extent as to eliminate in her urine only a few grams of sugar *per diem*. Her life being endangered by an umbilical hernia, she was operated upon under chloroform narcosis and recovered without mishap. Of great interest was the influence of the chloroform on the metabolism of the patient; the sugar elimination immediately after the operation reached the extraordinary height of 180 grams per day, which lasted for some time. Besides cases such as this, there have been found described in the literature, cases in which after chloroform narcosis a genuine severe diabetes developed in patients in whose urine before the operation not a trace of sugar had been found. Bendix conducted an experimental investigation on dogs to determine the effect of chloroform on alimentary glycosuria. He found, in the first place, that dogs which had been chloroformed for from one-half to one hour, showed no trace of sugar in the urine. He fed these dogs on large quantities of grape sugar, and after from eight to twelve hours he examined their urine for sugar and found none. The next day after feeding them with an equal quantity of sugar, he kept them in a condition of chloroform narcosis for from one-half to one hour, and after the lapse of a few hours sugar was found in their urine. The same results were obtained after the dogs had been under the influence of profound morphine narcosis. Ebstein's explanation of these phenomena was that chloroform causes a considerable damage of the protoplasm and occasions a deficient respiration of the tissues, *i. e.*, a diminished intake of oxygen and a diminished output of carbon dioxide, resulting in an insufficient metabolism of the grape sugar. This explanation was fortified by the researches of Winterstein, who found that animals under the influence of chloroform take up less oxygen than normally.

Chemical Nature of Digestive Enzymes.—Although the only exact knowledge of the enzymes has been restricted to the mode and nature of the transformations they occasion in other bodies, all attempts at elucidating the intimate chemical structure of the enzymes have not been entirely without success. Two years ago it was discovered by H. Friedenthal that the pepsin in the gastric juice of the dog is separated from the mucous membrane in the form of a very complicated compound, resembling nucleo-proteid, and is precipitated in the cold by mere dilution of the gastric juice; this body giving rise to the following splitting-products characteristic of nucleo-proteids, namely, pentoses, xanthine bases, phosphoric acid and albuminous bodies. Similar bodies were found in preparations of other digestive enzymes and in each case, a solution rendered free of nucleo-proteid was deficient in zymotic activity. According to H. FRIEDENTHAL and S. MIYAMOTA (Ctlblt. f. Physiologie, Mch. 29, 1902), the above results left open the question as to whether all the components of this giant molecule are necessary for the manifestation of zymotic activity, or whether from among the splitting products of this compound an active enzyme might not be obtained. In the case of pepsin, as well as of trypsin and invertin, they succeeded in obtaining active zymotic preparations which by virtue of the negative orcin reaction showed the absence of nucleic acids, and which also by the failure of the characteristic color reactions, of which that with Millon's reagent is one, showed the absence of albuminous bodies. These results proved conclusively that the digestive ferments have a structure more complicated than the nucleo-proteids, for, besides nucleic acids and albuminoids, they contain a third chain of bodies of unknown structure in which is to be found the active enzyme. The latter when purified contains less ash than the secreted substance, and, as shown by the results of dialysis, belongs to the group of colloids, or is at least of a highly complex molecular structure and incapable of permeating thick parchment paper. The chemical nature of this compound will probably be revealed by further investigation. These researches indicate that it is unnecessary to ascribe zymotic activity to albuminous bodies.

Chloroform and Sudden Death.—It is generally agreed that death occurring during the administration of chloroform is to be attributed to its toxic action upon the heart. To what extent chloroform acts directly upon the heart tissues and to what extent this action is upon the vagus mechanism were the subject of an investigation by E. H. EMBLEY (Jour. of Physiol., Mch. 27, 1902). As the result of a large series of experiments on two hundred and ninety-eight dogs, he found that no sudden failure occurred from the action of chloroform upon the isolated heart; that the fall of blood-pressure was gradual or steep according to the percentage of chloroform vapor in the air administered; that there was no abrupt variation in the rate or efficiency of the heart such as occurs in an animal with an intact nervous system. On the isolated heart, chloroform has an immediate and progressively paralytic action; there is no preliminary period of stimulation and there is no sudden change in the rate or force of the heart beat. Heart muscle is very sensitive to the poisonous effect of chloroform. In the administration of chloroform by inhalation to the intact animal, the vapor tension of the chloroform in the blood only slowly reaches that of the inspired air. The investigation of the effect of chloroform upon the cardio-inhibitory mechanism, showed that chloroform raises the excitability of the vagus mechanism, particularly in the early part of the administration; that the increased excitability is due to the action of the chloroform on the vagus roots, and that the inhibitory action is more intense from being exercised upon a heart the native excitability of which is diminished by the action of chloroform upon it. This drug, when administered to morphinized dogs in air containing not more than 1.5 per cent. of the vapor, after a period of mild excitation slowly depresses vagus excitability. The latter may again be raised according to the duration of the administration or the endurance of the vagus by increasing the percentage strength of the vapor or by asphyxia. Section of the vagi or atropinization in dogs absolutely abolishes sudden heart arrest from chloroform. The heart under such conditions fails slowly with rapid pulse and diminished contraction volume. The danger of vagus inhibition of the heart lies chiefly in the earlier part of the administration before the initial increased excitability of the vagus mechanism has been succeeded by diminution. These results show that at least in dogs vagus inhibition is the great factor in the causation of sudden death from chloroform. Failure of respiration is mainly to be attributed to fall of blood-pressure. With a good blood-pressure failure of respiration by inhalation of chloroform is practically impossible. Restoration of failed respiration is dependent upon restoration of blood-pressure.

The Action of Diastases.—One of the most interesting problems in modern physiological research is that which is concerned with the various digestive enzymes. These hitherto mysterious bodies, of which little more than the name has for a long time been known, are being carefully investigated and understood. H. M. VERNON (Jour. of Phys., Mch. 27, 1902) studied the differences in action of various diastases on dilute starch solution, comparing the rate of progress in the color reactions with iodine in the case of each diastase. The nature of the liquid used to extract the enzymes is practically without influence on the rate of progress of the color reactions. The progress of the latter, however, varies considerably according to the nature of the diastase employed. Thus with ferment sufficient to give an achromic point time of ten minutes, extracts of pig's and dog's pancreas take about two and one-half minutes to digest starch to the deep violet stage and seven minutes to digest it to the red-brown stage. Extracts of sheep's and ox's pancreas take only about one and one-eighth minutes to digest the starch to the violet stage and four and one-half minutes to the red-brown stage, whilst extracts of human pancreas take intermediate times. The rate of change is not much affected by the addition of sodium chloride or of a minute quantity of hydrochloric acid, or by varying the dilution of the starch from 1 per cent. to .125 per cent., but is greatly influenced by temperature. The rate of conversion of starch into maltose by extracts of sheep's and ox's pancreas is more rapid at first than with pig's pancreas or with human saliva; but at the achromic point time the amount converted varies only from 59.7 per cent. to 56.9 per cent.. with the different ferments. After three hours' digestion at 38° C. the amount of starch converted by pancreatic extracts was always slightly over 70 per cent.; by human saliva about 80 per cent.; and by malt extract after only ten minutes action 79 per cent. was converted, but after three hours 80 per cent. It is an interesting observation that in the various experiments the percentage of starch converted into maltose was always a multiple of ten, either 20 per cent., 30 per cent., or 80 per cent. The author in agreement with Brown and Herron concluded that the simplest formula for soluble starch is $10C_{12}H_{20}O_{10}$, and that $C_{12}H_{20}O_{10}$ groups are successively split off and converted into maltose. There is a tendency of the starch molecule to undergo hydrolysis in tenths. The difference in action of malt and pancreatic diastases indicates that they are essentially different bodies. The one is of vegetable and the other of animal origin, and the author concludes that the most convincing argument indicating the dissimilarity of these enzymes is to be found in the fact that there is no instance of a complex organic body such as a proteid common to members of both animal and vegetable kingdoms. Salivary diastase is different from pancreatic, and the pancreatic diastases of different animals are different bodies.

The Digestion of Cane Sugar.—In a research on the inverting action exerted on cane sugar by different portions of the alimentary canal, J. H. WIDDICOMBE (Jour. of Phys., Mch. 27, 1902) found that while the intestinal mucous membrane of the pig inverts cane sugar freely, portions free from Peyer's patches are more active than those containing the patches. The inverting action is not exerted in an acid medium, but the enzyme is not destroyed by acid, its action being merely suspended. Lymphatic glands do not contain an inverting enzyme. The gastric mucous membrane contains an enzyme which acts in an acid medium, not in an alkaline one. Proteids interfere with or stop the inverting action of dilute hydrochloric acid. Gastric juice contains an inverting enzyme. Saliva has no action on cane sugar. Harris and Gow showed that the pancreas has no inverting enzyme.

Function of the Suprarenal Capsule.—Among the most widely-accepted doctrines concerning the suprarenal function is that which declares its office to be the secretion of a special substance which maintains the tonus of the cardiovascular system. Certain it is that suprarenal extracts introduced into the organism are shown to contain a substance which produces a condition of hypertonia. This substance, according to Fraenkel, belongs to the ortho-diazo-benzoic series, and to it he has given the name of sphygmogenine. It is believed by some to exercise a tonic effect upon the cardiovascular centers of the medulla oblongata; by others its influence is thought to act upon the general muscular system. I. SALVIOLI and P. PEZZOLINI (Gazz. degli Osped., Mch. 23, 1902) have sought the solution of that part of the problem which deals with the question of the secretion of this substance by the glandular elements during life or its development as a decomposition-product in the extract. To this end blood was withdrawn from the suprarenal vein of a dog and at once introduced into the jugular vein of another dog. Sphygmographic and neumographic tracings, taken immediately after the injections, showed increased arterial pressure, decreased frequency of cardiac systole, but increase in its strength; with slow and superficial respiration. In the control experiments with blood from the general circulation, these phenomena were not produced. The circulatory and respiratory changes caused by injection of blood from the suprarenal vein were identical with those induced by injection of suprarenal extract; hence it is concluded that the substance producing these effects is a product of the internal secretion of the suprarenal capsule.

The Pulmonary Circulation.—The balance between the circulation of the system at large and that through the lungs must be a nice one to insure the proper aeration of the blood. T. G. BRODIE (Lancet, Mch. 22, 1902) has been conducting experiments upon animals with reference to the determination of the pressure changes in the pulmonary artery. One of the means he used to this end was drugs, and among them the suprarenal extract, the effect of which he notes in the following terms: It is known to cause a large rise in aortic pressure due to peripheral constriction, to increase the heart-rate and nearly double its output of blood by a complicated effect if the vagi be undivided by a marked inhibition of the heart, occurring mainly during the period of heightened aortic pressure. Its effect on the blood volume of the lung is to cause a small diminution soon followed by a marked increase persistent during and subsequent to the rise in the aortic pressure. Thus the main effect is to produce a distinct congestion of the lungs. The effect upon the pulmonary blood-pressure is a rise to nearly double value, commencing with and lasting longer than the rise in the aorta. The pressure in the left auricle falls at first, then rises when the aortic pressure has reached its maximum. The action of this drug on the pulmonary arteries by direct perfusion gives a striking result, causing the opposite of what takes place in the systemic vessels under it, namely, instead of a constriction to almost closure, it causes a marked increase in the rate of flow. In only one instance was constriction obtained and then to a less degree than in the limb. These experiments are of course of importance in considering whether the suprarenal extract is of value in hemorrhage from the lungs, but conclusions up to the present must be somewhat guarded because experiments have not yet sufficiently decided the action of small doses.

Dextrose and Metabolism.—It is a fact generally accepted by physiologists that many substances, of which peptone and albumoses are examples, when absorbed through the alimentary tract are highly nutritious, but when injected into the subcutaneous tissue are distinctly poisonous to the bodily structures. J. SCOTT (Jour. of Physiol., Mch. 27, 1902) shows that dextrose belongs to this class of substances. It had been shown by Kossa that the subcutaneous administration of cane sugar in the dog and rabbit, produced a marked increase in the total amount of nitrogen, urea and ammonia in the urine, which continued for some time after the administration of the sugar, and that this was associated with great emaciation of the animals; these observations tended to show that cane sugar, administered in this way, has the effect of increasing the disintegration of proteids. Scott shows that large injections of dextrose, from 5 to 7 grams per kilo of body weight, cause a marked increase in proteid metabolism. The subcutaneous injection prevents the dextrose from being acted upon by the liver or at once excreted by the kidneys, so that it is as far as possible acted upon by the general tissues of the body. Under these circumstances dextrose or more probably an acid derivative of dextrose acts like such toxic agents as phosphorus, poisoning the organism. A diminution in the proportion of nitrogen built into urea is also caused, and in this respect the administration of dextrose produces an effect similar to that induced by giving diphtheria toxin or such drugs as sulphonal which interfere with the metabolic processes.

The Spleen and the Formation of Red Blood Cells.—It is generally taught and almost universally stated in the text-books that the spleen is one of the organs concerned in the production of red blood-cells. The latest researches indicate that the spleen plays no such rôle. The results of a large number of experiments performed by D. N. PATON, G. L. GULLAND and J. S. FOWLER (Jour. of Physiol., Mch. 27, 1902) show that in dogs and cats there is no difference in the number or in the character of the erythrocytes in the blood going to and in the blood coming from the spleen, but that there seems to be a slight diminution in the number of leucocytes, and more especially of the polymorphonuclear cells. Removal of the spleen in dogs, cats and rabbits has no influence upon the number of the blood-corpuscles, nor upon the proteids of the blood-plasma, at least in dogs. It seems to be followed by a slight fall in the proportion of eosinophile leucocytes. After hemorrhage in rabbits and hemolysis in dogs, the normal number of erythrocytes is regained as rapidly in animals without the spleen as in those with the spleen. The injection of extracts of the spleen in rabbits does not cause the increase in the erythrocytes which is produced by the injection of extract of the bone-marrow.

Ligation of Renal Arteries.—In order to determine a question of great importance, namely, whether after complete ligation of the renal arteries the glomeruli are or are not cut out of the circulation, A. P. BEDDARD, (Jour. of Physiol., Mch. 27, 1902) conducted a series of experiments on the frog with the following results. Ligation of all the arteries to the kidneys cuts the glomeruli permanently out of the circulation; injection of the kidneys by way of the renal-portal veins gives no evidence of the possibility of a collateral circulation being set up from the renal-portal capillaries through the glomeruli. When all or a certain proportion of the glomeruli are cut out of the circulation, no spontaneous secretion of urine takes place. If urea solutions be injected into the dorsal lymph-sac of such frogs, no secretion takes places if all or the greater part of the glomeruli are cut out of the circulation. The cutting off of the arterial blood supply of the kidney causes the epithelium of the tubules to degenerate rapidly.

Urea Estimation.—The importance of appreciating the character and activity of the metabolic processes of the body, whether they are abnormally energetic, with destruction of the somatic tissues, or, on the other hand, extraordinarily sluggish, with a tendency to lead to fatty degeneration, seems obvious enough. The present method of comparing the average normal amount of urea in a twenty-four-hour urine with that found in any given case, and so rapidly determining an excess or a deficiency, is most unsatisfactory and inaccurate. Prof. BEHREND (Amer. Med., Mch. 15, 1902) points out a method which is sufficiently simple and by means of which the metabolic processes can be much more carefully gauged. There are two sources from which the body derives the nitrogen present in the excreta: (1) The food, and (2) the tissues of the body. These sources, which are ordinarily variable, easily lend themselves to control. A diet is selected, of which the nitrogenous content is carefully estimated. The author suggests the following: 1½ liters of milk, 6 eggs, 250 grams white bread, 45 grams butter. This represents about 2,250 calories, the quantity necessary to sustain an individual weighing 130 lbs. in a state of health. The nitrogen in the diet amounts to about 13 grams. The nitrogen derived from the tissues can be approximately controlled by putting the individual to bed and keeping him at "physiological rest." A healthy person, whose metabolism is thus controlled soon reaches a state of nitrogenous equilibrium, in which the amount of nitrogen ingested is equal to that excreted. The sources of nitrogen are thus easily controlled. Nitrogen is excreted principally in the urine as urea, and also in the feces; the former contains about 80 per cent. of all the nitrogen excreted. Of the urea molecule, nitrogen constitutes .46⅔ per cent. by weight. Knowing these facts, and having estimated by any of the well-known laboratory methods the amount of urea passed by the patient in twenty-four hours, one is in a position to calculate the entire amount of nitrogen excreted by the following formula: Amount of urea x .46⅔ ÷ .80., or, more simply, amount of urea x $^{1}/_{12}$. The resulting figure is to be compared with the amount of nitrogen contained in the ingesta, and an estimation of excess or of deficiency arrived at. The method certainly represents a great advance on the primitive procedures used in most laboratories; it is itself, however, subject to many sources of error and might easily yield enormous variations.

Parathyroid Glands in Man.—Recent study of the thyroid gland has led to the discovery of organs situated in its vicinity which, although inferior in volume, are of equal if not greater interest. Besides the inconstant accessory thyroid glands, not infrequently observed, other glands have been discovered in the cervical region; described first by Sandstroem and called by him parathyroid. These are constant, at least four in number, and comprise a superior and inferior group; so that to-day, for the primitive idea of a single thyroid body, we may substitute a thyroidal system, having intimate anatomical relations. A. Civalleri (Il Policlinico, No. 21, Fasc. 3, 1902) submits the results of personal investigation of this subject in the following statements: The two superior parathyroids are situated posteriorly to the thyroid corresponding to the junction of the superior two-thirds with the inferior third of the posterior thyroidal border; and are in relation with the inferior border of the cricoid cartilage, lying posteriorly to the inferior thyroid artery and recurrent nerve. This position, though most frequent, is not invariable, as the glands may be found, at times, in the median line lying against the trachea, or higher in more or less direct relation to the posterior branch of the superior thyroid artery. The inferior parathyroids are found in one of three locations: (1) Posterior to the lower part of the thyroidal lobes, this being the most frequent location; (2) immediately below the inferior margin of the thyroid; (3) situated from a few millimeters to some centimeters below the latter point, and even as low as the retrosternal adipose tissue. In both groups supernumerary parathyroids may be seen; this is true especially of the inferior group. Both inferior and superior parathyroids have the same structure, are of epithelial nature and have an internal secretion.

THERAPEUTICS.

Collargol (Crede) in Sepsis.—A most favorable report of the employment of this soluble silver preparation in a large number of septic cases is made by J. Müller (Deut. med. Woch., Mch. 13, 1902). In all the cases (about twenty) he used a 1-per-cent. solution, giving from 1 to 5 cubic centimeters intravenously. Included in the list are erysipelas, meningitis, extensive cellulitis, mastitis, pelvic exudates, lymphangitis, empyema, tuberculous arthritis. In all cases immediate improvement was noted after one injection, and in severe cases several were given. No after-effects were noted except a chill following from one to four hours after the injection. The author places great faith in the method and its extended future use.

Treatment of Gout.—Apart from the treatment of an acute attack of gout, the results of which are usually satisfactory, the condition or conditions which predispose to such attacks and which keep the gouty individual in a state of more or less invalidism depend upon derangements of one or more of the great physiological systems. A. P. Luff (Practitioner, Mch., 1902) believes that for the gouty diathesis the potassium salts are of distinct benefit and of these the citrate is probably the best. If given in sufficient doses it tends to diminish the acidity of the urine and increases the solvent power of the urine for the uric acid salts. He has experimentally shown that the potassium salts delay and inhibit the conversion of the soluble gelatinous sodium biurate into the comparatively insoluble crystalline biurate. When there are no appreciable uratic deposits in the joints, and there are present a sluggish action of the liver and a gastro-intestinal catarrh, the sodium salts undoubtedly have a decided action. The lithium salts have no better solvent power upon the gouty deposits and possess the disappointing property of being strong cardiac depressants. Now and then a good dose of blue pill followed by Epsom salts or by a little calomel combined with euonymin and colocyn it will be found useful. To increase the circulation and improve the nutrition, baths and massage are indicated in the more chronic cases. In swollen joints, the seats of considerable deposits much benefit is derived from massage of each joint for a few minutes, followed by galvanism with the negative pole over the affected area. Radiant heat and superheated air baths have a more penetrating effect than other forms of heat and sometimes there is a progressive improvement for a long time after cessation of the baths. In gouty neuritis superheated baths followed by the constant current give, perhaps, the best results. In the treatment of gouty eczema attention should be paid to two details especially, the regulation of the bowels and the absolute abstention from alcohol in any form and especially the red wines. In the dry irritative stage the application of a lotion containing liq. plumbi subacetatis, ʒj; liq. carbonis detergens, ʒj; and aqua sambuci, ad Oj, is very soothing, especially if followed by a powder such as cimolite powder. In gouty pruritus, carbolic-acid washes are useful, and in the chronic form sulphur baths are beneficial. If insomnia be present, examine the pulse and urine, for the tension is frequently high and a brisk purge is frequently more successful than hypnotics. As a preventive to gouty attacks guaiacum resin seems to have a decided effect and can best be given in cachets, commencing with doses of five grains three times a day and gradually increasing to ten or twelve grains. It can thus be taken without any discomfort to the patient. Quinic acid is recommended by some. No hard and fast lines as to dietary can be laid down in the treatment of gout. Simplicity of food means facility of digestion, but each individual must be consulted in regard to the things which disagree with him. The amount of fluids ingested is usually found to be much below what it should be, especially in women. As a rule alcohol should not be used at all, but some patients seem to need a little whisky or brandy. Although an excessive consumption of meats, particularly red meats, is a potent factor in producing gout, yet there are a few cases of chronic gout which improve and even recover on an exclusive diet of red meat and water. These are usually the cases of gouty arthritis which have failed to respond to the ordinary methods. This course of treatment should last from ten to twelve weeks, after which a gradual return to the ordinary diet should be made. In regard to climate a fairly bracing air with a low relative humidity is the most suitable for the gouty person.

Treatment of Scarlatina.—Since the introduction of diphtheria antitoxin, other antitoxins have been tried for the other bacterial diseases with varying success. E. v. Leyden (Arch. f. klin. Med., Vol. 73) employs for the treatment of scarlet fever the serum of convalescents, on the supposition that certain bodies are produced in the blood which are capable of bringing the disease to a termination. Of a total number of sixteen cases, the results were satisfactory in but three and in nine they were slight. Deleterious influences could never be observed. It is essential that the serum be obtained from otherwise healthy persons, that it be sterile and as fresh as possible when injected, and that it be administered early in the disease. Since there is as yet no method of measuring its strength, an arbitrary quantity, 20 cubic centimeters, has been employed.

Pyoctanin Blue and Ascites.—Ascites originating from disease of the heart and kidneys is usually a symptom difficult to treat. E. LOUSTVERK (La Sem. Méd., Mch. 19, 1902) has found that pyoctanin blue, in a daily dose of 0.03 grams divided into three pills, gave the following results in eleven patients: Two were troubled with persistent nausea compelling abandonment of the treatment, but in the nine others, to whom he had previously administered in vain the medicines usually employed, he noted after a few days an appreciable improvement, marked by the disappearance of the edema and dyspnea, and later by an improvement in the abnormal sounds of the heart. His opinion is that the good effects of the pyoctanin blue are due to its diuretic action and stimulation of the sweat glands. In order to avoid gastric disarrangement, he recommends administering it not less than three hours after meals.

Morphine Derivatives.—A great deal of labor has been expended during the last few years by pharmaceutical chemists in the effort to elaborate a more satisfactory substitute for morphine. The tendency to habit formation, the narcotic effects, the depressant action, are instances of the properties which it is often desirable to exclude or modify. Of the innumerable new derivatives, the most important are codeine, heroin, dionin, and peronin; these four have been studied with the utmost detail and precision by MAYOR (Rev. Méd. de la Suisse Rom., Mch., 1902), from both a clinical and an experimental standpoint. His conclusions are as follows: Peronin is a preparation of which the cardiodepressant effects are so marked as to exclude its use, inasmuch as its therapeutic value is not superior to that of codeine or of dionin. Dionin and codeine, on the other hand, are drugs which represent a permanent addition to the armamentarium. Dionin is in some respects preferable to codeine. It is more soluble and used hypodermatically is painless. It does not produce the euphoria so characteristic of morphine, and, in a less degree, of codeine. Hence, there is far less danger of habit formation. The narcotic effects are also less pronounced in case of dionin than in any of the other drugs of the group studied. Thus, as an anodyne and as a soporific dionin is of vastly inferior importance. On the other hand, it seems to exercise a specific and selective action upon the sensory terminations in the trachea and bronchi. It controls all forms of irritative and superfluous cough; it regulates respiration; it diminishes the feeling of dyspnea. In other words, it fulfils the same indications as does codeine, but produces less of the psychical effects of that drug. The properties of heroin place it midway between dionin and codeine, on the one hand, and morphine on the other. A powerful respiratory sedative, it produces at the same time a considerable degree of euphoria and of somnolence. It has a well-marked depressant action upon the heart and the vasomotor system. The practitioner has thus at his command a set of alkaloids which produce a graded series of effects of a very definite character. Evidently he must select that one which answers best to the indications in any given case. At all events, he will largely discard morphine in the enormous group of respiratory diseases.

Sodium Bicarbonate in Empyema.—Irrigation with a four-per-cent. solution of bicarbonate of sodium was the curative agent in a case of empyema described by L. BETANCES (La Rev. Méd. de Santo Domingo, Year 1, No. 2, 1902) in which incision, drainage, and lavage with boric-acid solution had failed to prevent reaccumulation of pus. Daily irrigation with the bicarbonate solution for five days effected a cure.

Treatment of Eclampsia.—In the treatment of eclampsia no hard and fast rules are to be adhered to; it is of the greatest importance to individualize. The prophylaxis is especially emphasized by J. VEIT (Therap. Monatshft, April, 1902) in the form of strictest asepsis during delivery, diminished feeding by mouth and the use of narcosis in all vaginal exploration to prevent any irritation which may lead to new convulsions. When the cervix is fully dilated, the child is to be rapidly extracted in narcosis; if only partly, dilatation with the fingers or a slight nicking of the hard ring will generally do. If the cervical canal be not yet obliterated, rupture of the amniotic sac does good by reducing the intrauterine pressure, and, if necessary, a metreurynter may be inserted. Symptomatically, morphine, chloral by rectum, venesection and hot baths or packs act favorably upon the convulsions, though they do not heal. Recently radical procedures, such as Cesarian section and *accouchement forcé,* are advised in all cases in which the parturient canal is not ready for immediate delivery, but these methods as routine are frowned upon by the author since the mortality is not less high with more conservative measures. If, however, the condition of the patient become worse, they are indicated.

Intravenous Injection of Sodium Cacodylate.—Experience with over 400 cases has taught F. MENDEL (Therap. Monatshft., Apr., 1902) that sodium cacodylate, injected directly into the veins, is a perfectly safe and most efficient means of producing the full therapeutic action of arsenic. In anemia and chlorosis the treatment, continued for from four to six weeks, produced an effect such as was never seen with iron in any form. The common dose varied from 0.05 to 2 grams injected every second day. In the severe cases of tuberculosis only a tonic effect was noticed; no specific influence was manifest. In milder cases, a cure was effected. Diabetes was favorably influenced, cases of exophthalmic goiter showed marked improvement, and a number of nervous and skin affections were considerably benefited. The use of the drug in inoperable carcinoma, however, proved a total failure.

Prevention of Gall-Stones.—Eunatrol, the acid oleate of sodium, has been found by W. N. CLEMM (Therap. Monatshft., Apr., 1902) an excellent remedy for the prevention of gall-stones in those so predisposed, and he believes that all cases of uncomplicated cholelithiasis are curable by its use. Experiments showed that gall-stones readily crumbled up and dissolved if kept in a solution of eunatrol and there is every reason to believe that the drug is stored in the liver and there exercises a similar function. The only disadvantage is its bad taste, which can be overcome by pineapple essence or tincture of valerian.

Fate of Quinine in the Body.—Experiments on dogs, according to A. MERKEL (Arch. f. Path. u. Pharmak., Vol. 47, No. 3 and 4), show that quinine is totally decomposed in the organism with the exception of from 12 to 14 per cent. The figures remain about the same even after prolonged feeding with quinine. The undestroyed portion appears in the urine in the form of a basic compound. From a practical point of view the value of large doses is clear, since with small ones there is danger of too rapid decomposition of the absorbed alkaloid and little opportunity for an accumulation in the system. For this reason, also, subcutaneous doses are valuable.

Absorption of Carbohydrates from the Rectum.—Enemata of 60 grams of sugar or dextrine in from 120 to 200 c.c. of water, or of 100 grams of starch in 300 c.c. of water, according to F. Reach (Arch. f. exp. Path. u. Pharmak., Vol. 47, No. 3 and 4), do not increase the respiratory exchange of gases, while 60 grams of sugar in 120 c.c. of water by mouth do so to a marked degree. Glycosuria or dextrinuria does not take place. The examination of the stools is not practicable to determine absorption, since these substances undergo decomposition in the intestines. There is no question, however, that there is some absorption of sugar, though this is slight and very slow. Dextrine is absorbed still more slowly, but starch slowest of all, and its absorption decreases the longer this carbohydrate is in the intestines.

Potassium Salts in Chronic Arterial Tension.—Attention is called to this old therapeutic measure for the treatment (especially in gouty subjects) of high arterial tension by Lauder Brunton (Deut. med. Woch., Apr. 17, 1902). The author found that the ordinary commercial saltpeter was more efficacious than the refined product, probably on account of the nitrites present. His modified formula therefore consists of a powder, to be given every morning in a large glass of water, which contains potassium bicarbonate, gr. xxv, potassium nitrate, gr. xx, and sodium nitrite, gr. ½. These powders can be given for a long time without ill-effects and the lowering of arterial tension is accomplished by diminishing the heart activity and increasing the caliber of the arteries. Such a mixture of nitrates and nitrites also has a marked diuretic action, which is of especial value in these cases.

Raw Meat and Tuberculosis.—The good effects obtained by C. Richet and J. Héricourt by treating tuberculosis in animals with raw meat and raw beef-juice have suggested to A. Josias (La Sem. Méd., 1902, No. 16) the propriety of trying this method among children afflicted with the disease in varying degrees. His procedure is as follows: Every day the patient receives 500 grams of raw meat, from which about 15 to 20 c.c. of juice are obtained from 100 grams, and from 100 to 200 grams of chopped raw meat. It is necessary at the same time to stop completely all use of cooked meat, which the above observers have found is not useful in tuberculosis. Children as a rule take the meat-juice easily, sometimes pure, sometimes as a bouillon, cold or warm. For two years Josias has employed this treatment in the hospital on 24 children who were victims of pulmonary tuberculosis. The diagnosis was confirmed by an examination of the sputum and by an injection of tuberculin. The diet was added to the usual treatment in the hospital and gave the following results: Six patients with the disease in an early stage gave 4 cured and 2 improved; 6 in the second period registered 1 cured, 1 improved, 2 aggravated, and 1 death; 12 in the third stage gave 1 cured, 2 improved, 4 aggravated, and 5 deaths. In a total of 24 cases there were 6 cured, 6 improved, 6 aggravated, and 6 deaths. In basing his conclusions on these facts, the author thinks that the treatment with raw meat-juice and raw meat in a large quantity is of service and may bring about a cessation of the process, provided the case be one of pure infection. When the infection is mixed and the intoxication of the organism profound, this treatment is useless. The diagnosis, moreover, depends on the degree and extent of the alterations in the lungs and the general physical condition of the patient. The rapid increase in weight after the beginning of this treatment is a good sign of the reawakened resistance of the patient to the disease.

Erysipelas and Red Light.—Two years ago V. Bie of Copenhagen, in a discourse on phototherapy, presented the good effects of long exposure to red light in smallpox and raised the question as to whether it would not be convenient to employ the same procedure in all infectious diseases with eruptions of the skin, especially scarlet fever and erysipelas. H. Krukenberg (La Sem. Méd., 1902, No. 16) reports a series of 18 cases of erysipelas, of which 15 were facial, treated in this way. A room surrounded by red glass was the abode of the patients, so that by day the sunlight was red, and by night all artificial light was made red by means of lamps similar to those employed in photography. In only the first 3 of the 18 cases were wet dressings of alcohol used. The red light seemed to exercise a great influence upon the disease, especially upon the length of the fever. In 7 cases the fever disappeared in less than twenty-four hours and in the other 11 patients in from one to ten days; in 2 after six and seven days. It is necessary to add that in one of these two patients the erysipelas was accompanied by more or less grave general troubles which were almost entirely absent from the other cases. The treatment could not be carried out in all its rigor because the patients were in bed in a room with only four windows, some of which had to be opened part of the time. If this light treatment ever show itself serviceable against erysipelas, it is not because the red rays have a specific action, but simply because they are the only ones which do not have any action one way or the other upon such diseases. In order to assure the success of the treatment, it is necessary to exclude absolutely all other light from the room. It is, however, well to note that the recovery which occurs under this treatment is very prompt. It is not at all fixed, as is shown by the disastrous relapses following any interruption of the process.

Silver in Lavage.—Lavage with a solution of nitrate of silver as a cholagogue is a new procedure, recommeded by F. Ehrlich (La Sem. Méd., Apr. 16, 1902) for grave cases of angiocholitis, cholelithiasis, cholecystitis, etc. If the patient be seen early in his disease, the treatment is begun by washing out the stomach with water at 40 to 50° C. until the fluid returns completely clear. Then by introducing 500 c.c. of a solution at the same temperature of 1 per cent. nitrate of silver in distilled water, after letting the liquid act for from one-half to two minutes, it is withdrawn and the process repeated. Finally, washing with ordinary hot water is continued until the fluid ceases to show turbidity. The whole procedure should last from ten to fifteen minutes and should not be begun until the patient is accustomed first of all to ordinary gastric lavage, because without it the leaving of the nitrate of silver within the stomach may give rise to intoxication. The lavage should be performed immediately before eating, should never be painful, and with nervous patients should at first be carried out only every other day. Meanwhile, a proper diet should be followed. After a few of these washings, the liver will be seen to grow a little larger and the bad symptoms at first increased; then when the treatment is continued a bilious diarrhea will occur, and the enlargement of the gland and other abnormal symptoms will soon disappear. In addition to the mechanical action of the washing of the stomach and the value of the heat, the nitrate of silver seems to penetrate the duodenum and provoke an activity of the mucous membrane at the orifice of the canal, so that there is a reflex increased secretion of the bile. It also acts as a cholagogue. It should be given in pill form, because it is then less apt to cause a disagreeable metallic taste.

Hemostatic Action of Calcium Chloride.—That diminished coagulability exists in all hemorrhagic diathesis T. Silvestri (Gazz. degli Osped., Apr. 13, 1902) considers unquestionable; hence the use of calcium in hemorrhage, whether primary or secondary, would seem a most rational measure. Silvestri has had good results from calcium hypophosphite by mouth and rectum; but in view of the necessity for more rapid introduction of the drug into the system in emergency cases, he has recently essayed its endovenous injection, with very satisfactory results, from 100 to 150 c.c. of a one-per-cent. sterilized solution of calcium chloride being injected in the median basilic vein in four cases for the control of hemorrhage of the uterus, rectum, nose, and lungs.

Phototherapy in Neurasthenia.—After reviewing the various measures used for the relief of this condition P. Joire (Le Nord Médical, Apr. 15, 1902) calls attention to the advantages of phototherapy in nervous conditions as observed in his personal experience. He maintains that, the vibrations of the red rays being slower than those of other rays of the solar spectrum, they have a sedative effect upon the nervous system and are especially adapted to conditions of hyperesthesia such as exist in the neurasthenic, giving rise to the various neuralgias of such patients. Circulatory disturbances depending for the most part upon the vasomotor nerves are modified by the trophic influence of light, especially of the red rays. Finally, exposure to light rays relieves the general depression by increasing appetite and digestion and improving the general nutrition.

Solanum Carolinense in Epilepsy.—From a series of clinical and pharmaceutical investigations on the value of this drug in epileptic conditions, M. C. Thrush (Phil. Med. Jour., May 3, 1902) submits the following conclusions: It is of greatest value in grand mal of idiopathic type without hereditary taint and when the disease has begun beyond the age of childhood. It is next of greatest value in hystero-epilepsy with marked convulsive seizures. In cases of petit mal the effect is less marked than in the major type. In well-advanced epilepsy of any type in which there is degeneration of the cerebral neuron, the drug will act specifically for a time, even better than the bromides, but it will finally be determined that the bromide salts will ultimately control the attacks better in these cases. There is sufficient clinical evidence to warrant the statement that the inherent advantages of vegetable depressomotors is great as compared with any mineral salts given with the same intent, since the destruction of the blood-corpuscles by the latter is a most detrimental feature in that it lessens the resistance of the individual in a disease in which, above all, the constitutional tonicity should be favored as ideal treatment. A thorough impregnation of the nerve-cells can be had only in proportion as solanum is pushed to the fullest physiological dosage and maintained for periods of months or a year. The fluid extract freshly made is the best preparation, given in ascending doses from one dram till the full constitutional effect is reached. No toxic symptoms result and the mental faculties are not impaired by its use.

Treatment of Gastric Ulcer.—A number of suggestions in the treatment of this condition are contributed by C. Pariser (Deut. med. Woch., Apr. 17, 1902). The administration of large doses of bismuth through a stomach-tube has been successfully employed in a large number of cases, but as the method is somewhat inconvenient and troublesome, the author proposes doing away with the tube. He merely gives from 3 to 5 drams in water every morning on an empty stomach and keeps the patient quietly in bed for an hour before giving breakfast. As a substitute for the bismuth, he also gives a mixture of equal parts of pulverized chalk and talcum to which from 1 to 3 drams of calcined magnesia are added. For this he claims that, as it does not discolor the stools, the presence of blood in them may be readily detected. The administration should be continued for three weeks or longer, morning and evening, but always on an empty stomach. If diarrhea occur the magnesia may be omitted for a time. Rest in bed for a period of several weeks or until all signs have disappeared is strongly recommended. A good diagnostic sign is the presence of a dorsal point of tenderness between the tenth and twelfth intercostal spaces, usually to the left of the column. As 95 per cent. of the cases present an ulcer of the posterior wall, the absence of this sign is comparatively infrequent. As long as it can be elicited, rest in bed must be continued. For a diet the author recommends giving milk in various ways, but never raw. Barley, tapioca, and gruels may be added, also an occasional egg in weak bouillon. Nutrose, a casein preparation, is of value. All meat is withheld until pain has almost disappeared; boiled white meat of chicken may first be given, the others not until very much later and then always chopped or scraped. When vomiting is present, rectal alimentation is substituted. At first weak gruels in small quantities with red wine may be injected, followed in several days by more substantial enemata.

Antiseptic Medication of the Genito-urinary Tract.—A great impetus has recently been given to the study of internal antisepsis in cystitis. Rovsing made a careful study, with bacteriological examinations, of 29 cases of this disease and came to the conclusion that in 17 of them the cystitis had been produced by catheterization with a sterile instrument. Notwithstanding the most perfect prophylaxis, the urethral flora is almost invariably carried upward by the catheter and infects that very susceptible organ, the bladder. The indication is, of course, to avoid the use of the instrument, especially as a means of irrigation in already existing cystitides, and to substitute the antiseptic drugs. A very thorough and detailed research into the action of eight of the most important of the so-called urinary antiseptics has been made recently by Wannier (Centralbl. f. d. Krankh. d. Harn- und Sex.-Org., Nov., 1901), which affords a reliable basis for this mode of treatment. Boric acid, a drug of ancient repute, was first experimented with. The author found that bacteria would grow just as freely in the urine of individuals who had received the drug, even in large quantities, as in unmedicated urines. The growth of the various micro-organisms was not even delayed. Benzoic acid, which *in vitro* acts as a fairly efficient antiseptic, proved unsatisfactory. Small doses were without any effect, while larger doses (3.0 or 6.0 p. die) inhibited the growth of only one of the common agents in cystitis, namely S. pyogenes, while the others were unaffected. Salol, composed of carbolic and salicylic acid, was of somewhat greater value. It had marked bactericidal properties with certain of the alkalinizing species, but failed completely to influence the growth of B. coli and typhi, and S. aureus. The first-named micro-organism is well known to be one of the commonest of the pathogenic forms in bladder inflammations. Guaiacol and creosote failed to exercise any effect upon the bacteria inoculated. Of all the drugs experimented with, urotropin and its allies, tannopin and tannoform, alone justified their claim to the title of antiseptics. Urotropin is a condensation product of ammonia and formaldehyde. After its administration, urotropin and formaldehyde are almost always to be found in the urine, occasionally also in the blood. The more acid the urine, the greater amount of formaldehyde does it contain. The action of the drug consists in almost absolutely inhibiting the growth of bacteria. B. coli exhibits a very sluggish vitality, however. The micro-organisms seem to be at first depressed in their proliferative function and finally perish. Tannoform, a compound of formaldehyde with tannin, and tannopin, composed of urotropin and tannin, failed to affect the growth of bacteria in the urine.

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SMITH ELY JELLIFFE, A.M., M.D., Ph.D., Editor,

No. 111 FIFTH AVENUE, NEW YORK.

Subscription Price, including postage in U. S. and Canada

PER ANNUM IN ADVANCE	$4.00
SINGLE COPIES	.10
WITH THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, PER ANNUM . . .	8.00

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LEA BROTHERS & CO.,

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SATURDAY, MAY 24, 1902.

BRONCHIECTASIS AND LUNG SURGERY.

AT the April meeting of the Harvard Medical Society of New York City (see MEDICAL NEWS, page 1002) Dr. Putnam reported a case of dilatation of the bronchi, with some of the most annoying symptoms of that affection, which was relieved by drainage of several cavities after puncture with the Paquelin cautery. It is well known how hopelessly obstinate to all medical treatment are these extremely offensive conditions. The inhalations of the various deodorant remedies seldom succeed in favorably affecting the fetid odor of the secretion in these cases. This often makes the life of the patient so miserable as to be almost unbearable and he sometimes proves so offensive even to near and dear friends that they are unable to continue in intimate association with the sufferer for any length of time.

Dr. Putnam's case represents one of the very few successful operations for this condition that have been reported. The result is almost unique in the completeness with which the patient's symptoms were relieved. Only those cavities were evacuated by means of the cautery in which fetid secretion was actually demonstrated to be present by means of the exploring needle. Other bronchiectatic dilatations remain in various portions of the lung and may easily be demonstrated by ordinary methods of physical diagnosis. The drainage of the very fetid secretion has made the expectoration entirely inoffensive and the patient no longer vomits as before, but has gained in weight. The disposition even has altered.

It is clear that operative intervention for lung complications is to constitute one of the features of the surgery of the near future. The method employed by Dr. Putnam of using a cautery at a dull red heat requires considerable time for the performance of the operation, but saves time and trouble in the end by avoiding all alarming hemorrhage. There seems no doubt that other, even tuberculous, cavities in the lung may, under favorable circumstances, be treated in this same way with excellent hope of equally satisfactory results. The interior of the thorax has been supposed to be a *noli me tangere* for surgeons. It would seem, however, from Dr. Putnam's experience that only ordinary antiseptic precautions are necessary and that the fear of subsequent pathological conditions in the lung because of irritation of the sensitive bronchial mucous membrane need not deter the surgeon from operating in serious cases when the hope of improvement from medical measures is evidently at an end.

THE VON LEYDEN FESTSCHRIFT.

THE VON LEYDEN FESTSCHRIFT, the memorial volume issued in honor of the seventieth birthday of the great Berlin clinician, is just ready for distribution and an advance copy has come to hand. The volume contains nearly one hundred articles from pupils, former assistants, distinguished colleagues in German Universities and foreign medical friends and admirers. Scarcely a single great university on the Continent is without a noteworthy representative among the contributors to these volumes. The first volume has for authors more distinguished medical men than any other volume of like size, unless, perhaps, the proceedings of an International Medical Congress.

Most of the contributions are distinctly clinical in substance and treatment. Some of them contain very recent advances in practical medicine. Of the foreign contributions only two are in English, but both of these are of notable interest. Sir William Broadbent writes on Chemical and Physiological Constitution and Therapeutical Action. He discusses the complex problems involved in this subject, which has been attracting so much attention during recent years. For him "a noteworthy illustration of specific affinity between a given metallic base and a certain organic compound is the predominance of the salts of sodium in the liquor sanguinis, while in the red corpuscles floating in this liquor sanguinis salts of potash predominate. Sodium salts combine with albumin, potash salts with globulin." He also touches on the obscure question of the therapeutics of iron. Closely allied to iron in all chemical properties are manganese, nickel and cobalt. "When these metals are given to anemic patients, the progress of the case is always much the same as if iron had been taken. The beneficial effects of iron are usually explained as being due to the supply of this metal to the blood, in which a deficiency of it exists, much as if it were food. The explanation, however, of its efficacy is not quite so simple." The other English contribution is from Dr. S. A. Knopf of New York and is entitled "A Few Thoughts on the Medical and Social Aspect of Tuberculosis at the Beginning of the Twentieth Century." Almost needless to say, this article represents some of the most advanced thought on this important subject.

The French contributions to the Festschrift are especially worthy of note for their clinical value and practical significance. Professor Bouchard of Paris discusses the important question of the tendency of arteries and veins to rupture during the course of cirrhosis of the liver. This vascular degeneration is not limited to the portal system, but may occur anywhere throughout the body and so give rise to epistaxis, hematemesis and to the purpuric spots that are often seen in these cases. These vascular changes may be of diagnostic significance. Professor Bourget of Lausanne has a contribution on the elimination of the alkaline chlorides in fibrinous pneumonia, a subject that has recently attracted much attention because of its prognostic significance. Professor Courmont of Lyons announces that early differentiation of many of the febrile infective diseases, including even smallpox and measles and perhaps chickenpox, may be made by means of the leucocyte formula of the blood. Professor Marie has a very interesting article on the delayed occurrence of scoliosis in infantile spinal palsy. Professor Metchnikoff of Paris has a very curiously interesting set of annotations on appendicitis, the predisposition to inflammation of that organ being due to some degree at least, according to his theory, on the injuries of the mucosa of the appendix produced by intestinal parasites in the very young.

The second volume of the work contains a series of articles by former pupils of Professor von Leyden. The list contains the names of many widely-known investigators of clinical aspects of medicine. Among them are Professor Eichhorst of Zurich, Jaffe of Königsberg, Scheuerlen of Stuttgart, Wassermann of Munich, Binswanger of Constance, Brieger, Goldscheider, Klemperer, Bernhardt, Salkowski, Wohlgemuth and Lazarus of Berlin. The two volumes constitute a magnificent and deserved tribute to perhaps the greatest clinician of our generation. The custom of publishing a Festschrift on these occasions is distinctly German, though it is being very happily imitated in this country and it is a custom that deserves to spread beyond its fatherland. Such a work provides an excellent opportunity for that grateful homage that the medical profession feels it owes, yet has so few chances to render, to its successful investigators. The Von Leyden Festschrift undoubtedly represents the very acme of excellence in the fulfilment of the old custom and will surely prove an incitement to other expressions of gratitude of a similar kind in the case of our great original workers.

SOME BOARDS OF HEALTH.

With the further development of the highly scientific art of preventive medicine, boards of health are becoming more and more important institutions in our recent civilization. Ten years from now it is probable that these official bodies will get from the public more credit than they now receive, but it is open to debate whether their possibilities and especially their responsibilities are duly appreciated at present by the average American community, particularly by the smaller cities, places, that is, with populations of from five to fifty thousand. At any rate, one may observe in many such towns frequent wasted opportunities such as years ago had more excuse than they seem to have to-day.

Without engaging deeply in the difficult and ancient problem as to whether the old practitioner with much experience and little recent information or the young graduate with little experience and much recent information be the safer sort of a person with whom to trust the prophylactic and therapeutic care of a town, it does seem probable that the average community of the approximate size mentioned is nowadays somewhat apt to place on its health board men of immature fitness and of often relatively restricted purpose. If they have in mind the outline of a modern system of municipal hygiene, still the details all are lacking, for experience has not furnished them. This is especially likely to be true in places where a "city physician" is employed, who is at the same time apt to be chairman of the health board and upon whom consequently the greater burden of the whole matter is inclined to rest. He alone usually feels any responsibility or draws any pay, and he alone therefore in all except emergencies is apt to be *de facto* the board of health. This factotum is usually a young man, often a very young man, some promising recent graduate, well known in town as "strenuous" and keen, perhaps the son of the oldest, richest, and most influential physician of the place, and who is thus honored largely for his father's sake. On this basis, or perhaps because he has already had the experience, or refused to have it, or was defeated trying to have it when younger, the successful middle-aged physician is not apt to contest the appointment or election of the newcomer, even although the signatures on the diploma or license of the candidate may be still undried. So the city physician and chairman of the board of health starts in unmolested and unadvised, determined, as were his numerous predecessors, to gain in experience and reputation what in the way of salary is by ancient custom denied him.

The question is, Is such an incumbent, on the average, east and west and up and down the land, a suitable person for so responsible a place? Should not men more suitable and technically better fitted for these positions be found and hired at an adequate salary, or if not findable at present, possibly, in sufficient numbers and at reasonable prices, should not they be provided by the proper institutions equipped for this immensely important work? The sins of commission of such a medical officer are not, to be sure, likely to be large, but it is certain that his sins of omission are apt to be larger and much more far-reaching than is dreamed of by the taxpayer who is master of a household of women and children, by the maiden lady, by the man-about-town, by the young man in the shop, or than is dreamed of especially by the politician by whose limited grace the position in question perhaps was filled The average taxpayer in the average small city cannot, of necessity, know what things the president of a health board who is at once learned, energetic, and widely experienced could do for him and his fellow townsmen, had he the chance. The taxpayers have had no experience in such matters—not at home for there they have as yet had no place, nor in the relative metropolis, for even if frequent visitors there, they casually see little of those great things which the competent health board year by year and day by day brings about, nor learn the rules which so well bind the resident of the great city and make him live well, theoretically at least. The average citizen of the nation does not, in general, even appreciate the difference between the healthful and the unhealthful town, although in specific cases he may feel when there is no need the pain arising, in consequence of its unhealthfulness, in the bottom of his mourning soul. The average citizen has no criterion by which to judge whether the town he lives in and helps, perhaps, to support, is up to date or five or ten or twenty years behind the sanitary times. The most vital interests of the population of a place are thus apt to rest in hands not correspondingly responsible. The board of health may "do its best for the people," but this best may be not good enough; and the people do not know whether it is good enough or not.

The members of the medical profession at large do know these things, do realize that oftentimes by ignorance, by neglect, or by inadequate assistance or superintendence, the town is failing to receive that which a thoroughly modern and energetic health board of proper experience should provide. The physicians know whether the death-rate of a place declines steadily, as it should in these modern days, how well or ill the school-children are protected from manifold danger, how well the vaccination is carried out, what the quality of the antitoxin, how the mosquitoes fare, how the slums look, how often the summer's garbage is collected, what relative chance the tenement baby has to live. No one else than the physician or the medical man knows these things, no one else, practically speaking, can know them. It is to the physician that belongs the high privilege of teaching the public, and thereby of sustaining and still further elevating the profession of medicine to its proper place above all purpose of mere money-getting or influence-getting into its proper duty of protecting man's greatest blessing and richest capital, health.

To the medical men and women of a community belongs unmistakably the real responsibility of seeing to it that that place has a board of health which represents the talent and energy adequate in securing for the greatest number the greatest amount of hygienic good. The possible amount of this to-day far outweighs in value all those considerations which usually restrict the possible services of medical officers in any community, yet the chief of these considerations are only money and a knowledge of how to use it productively for the intended purpose. The former of these no community values deliberately in comparison with its health; the latter of these the medical profession should supply.

What is requisite here (as is the case with vaccination, animal experimentation, and other strenuous themes) is public enlightenment, accurate information spread widely, among the people, so that they can neither thus deceive themselves nor be deceived by others. More than almost anything else the public needs medical information of the right sort. This information it is the privilege, as well as the duty, of the physician continually and abundantly to supply.

PINGPONGITIS.

AND now come our English cousins with a new disease—"ping-pong ankle," an account of which has just been published in the *British Medical Journal.* It is evidently a trouble that is known by its play rather than by its works, and in its etiology seems to be a companion to tennis elbow, golf chest, and "Charley horse," or the stiffened arm of the baseball player. Technically, it is a tenosynovitis, an acute inflammation of the sheaths of the tendons of the flexor and extensor muscles of the leg and foot; it is accompanied by much pain and swelling of the ankle, but yields readily to rest and antiphlogistic treatment. The foreign journals are full of hints and advice in regard to a proper costume and suitable footgear, but, fad though it be, and prone as we Americans are "to dress the part" in our sports and fashions, we hardly think that they will be generally adopted. Roses do not grow without thorns, and, universal as the game has been for the past year or more, the list of published casualities is as yet small.

ECHOES AND NEWS.

NEW YORK.

Plans for the Skene Sanitarium.—Mrs. Henry K. Sheldon has given $1,000 for the endowment of a bed in the Skene Sanitarium in Brooklyn in memory of her husband. Mrs. A. J. Skene is soon to transfer the sanitarium to Miss Mary Fisher as a home for aged and needy professional workers. There is a movement to liquidate the $35,000 mortgage on the property.

Honors to Dr. Rose.—Dr. Achilles Rose of this city has been made an honorary member of the Society Danaos of Argos, Greece.

Dedication of Hospital for Poor.—The Beth Israel Hospital Association will dedicate its building at Jefferson and Cherry Streets, in the center of the tenement district, on the 25th of this month. The new hospital will provide accommodations for about 125 patients, which will, in a measure, supply the needs of the sick poor, without regard to race or creed, in the lower part of the city. The cost of the hospital, including the furnishings, will be about $225,000. Of this amount, the sum of $106,000 has generously been contributed. In order to place the management of the hospital upon a sound basis, and free from financial embarrassment, the institution hopes to receive the support of the charitable public.

Needs of Maternity Hospital.—Not all people understand that J. Pierpont Morgan, who recently erected the new maternity hospital on Stuyvesant Square, did not endow it. He built the building at a cost of about $1,600,000, and gave it to the Society of the Lying-in Hospital, believing that the public should support it. The fund of the society is by no means adequate to meet the obligation. Its present income from investments is a little over $13,000 a year. It receives from the city an amount limited to $12,000 a year, and it may reasonably expect, from students' fees and other sources, about $5,000 a year, making a maximum total of $30,000 a year. It is estimated that with one-third of the hospital building in use, the expense of operation and maintenance will be about $90,000 a year. This will leave a deficit of about $60,000 a year, for which the society must depend upon the public.

American Laryngological, Rhinological and Otological Society.—There are errors in the program of the American Laryngological, Rhinological and Otological Society. The following corrections on the third page should be made: Eastern Section, H. Holbrook Curtis, M.D.; Middle Section, H. W. Loeb, M.D.; Southern Section, Chas. F. McGahan, M.D.; Western Section, E. W. Fleming, M.D. The following papers have been omitted: "Case of Thyroid Tumor in Interior of the Larynx," by Walter A. Wells, M.D., Washington, D.C.; "Report of a Case in which Laryngeal Symptoms Complicated Purpura Hemorrhagica," by Jos. T. Gibb, M.D., Philadelphia, Pa.

Alumni Association St. Luke's Hospital.—At a meeting of the Alumni Association of St. Luke's Hospital, held Friday, April 11, 1902, the following officers were elected for the ensuing year: President, J. Arthur Booth; Vice-President, William H. Sherman; Treasurer, J. Bentley Squier; Secretary, W. Scott Schley.

Manhattan Dermatological Society.—The last regular meeting of this society was held Friday, May 2, 1902, at the residence of the presiding officer, Dr. Wm. S. Gottheil. Dr. R. Abrahams presented a woman, thirty-five years of age, showing circular, slightly elevated patches, with scaling, on the extensor surfaces of both hands; the forehead, face, chest, thighs and knees became subsequently involved. The eruption resembles a psoriasis in many respects; Dr. Abrahams also thought of eczema seborrhœicum, parasitic eczema and possibly a syphiloderm; he favors the diagnosis of eczema seborrhœicum.

Dr. Kinch said it looked like a psoriasis, but not a typical one; some patches looked like parasitic eczema.

Dr. Pisko calls it psoriasis.

Dr. Oberndorfer said the main element was psoriasis; but many patches were covered with greasy friable scales as seen in eczema seborrhœicum.

Dr. Franklin agreed with the last speaker, and further remarked that the microscope would not shed much light on the diagnosis, since histologically the conditions were about the same.

Dr. Bleiman said the differentiation between eczema seborrhœicum and psoriasis is often quite difficult; cases of apparent eczema seborrhœicum often develop into cases of typical psoriasis; and psoriasic cases after treatment look like eczema seborrhœicum.

Dr. Gottheil makes little distinction between the two; he calls this case psoriasis with a marked seborrheic element present.

Dr. R. Abrahams also presented a case of ulcerating gumma, situated over the right trochanter. The patient, a female, about twenty-eight years of age, denies all knowledge of original infection; no history elicited; the ulcer was typical, deeply excavated, and about the size of a fifty-cent piece; no other lesion present.

Dr. Edward Pisko presents a typical case of lupus erythematosus, involving the left malar region and scalp; on the face the picture was typical; the scalp, however, shows the result of a long-standing process and the resultant scar-tissue was considered typical; the case is under treatment with 20-per-cent. resorcin ointment locally and iodoform internally. Dr. Pisko also showed a case of total alopecia; the usual hairy sites were absolutely hairless; the head was completely bald; the process began about one and one-half years ago as an alopecia areata and gradually extended. Lues and acute infectious diseases could be excluded.

Dr. L. Weiss presented a case for diagnosis; an elderly woman with an eruption confined to the nose and adjacent upper lip; the process began three years ago with redness, hard, acne-like nodules about the body of nose; at present, small areas of scar tissue can be seen; there is marked redness, some infiltration and ulceration with scaling; the lip shows redness and desquamation only. Dr. Weiss spoke of the differential diagnosis between acne rosacea, rhinophyma, rhinoscleroma and lupus erythematosus. He regards it as lupus, most likely.

Drs. Franklin, Geyser and Kinch called it lupus. Dr. Bleiman spoke in favor of acne rosacea; Dr. Oberndorfer called it acne rosacea hypertrophica. Dr. Abrahams based his diagnosis of lupus upon the scarification and presence of tubercles. Dr. Gottheil believed the condition to be lupus; Dr. Pisko said the rosacea present was but an early process of a lupus erythematosus and believed this case would so eventually develop.

Dr. L. Weiss presented a child showing spindle-shaped swellings involving the right index metacarpal bone and left thumb proximal phalanx; the skin is quite red and ulcerated; the tumors are hard and a little painful; the child is well nourished; there is no history of previous swellings, ulcerations or eruptive lesions; a radiograph of the case shows involvement of bone and joints. Dr. Weiss regards it as tuberculous rather than specific. Dr. Geyser said the radiograph shows the nature of the process to be tuberculous. Dr. Pisko calls it tuberculous spina ventosa. Drs. Oberndorfer and Bleiman consider it tuberculous; Dr. Abrahams said he saw a case resembling this one which did well only when put on antisyphilitic treatment; he was not so sure that this might not be specific.

Dr. W. S. Gottheil presented a case of seborrhœa oleosa involving the face; a marked exfoliation of mucosa of the upper lip was also present; in addition a chronic gingivitis. Dr. Gottheil believes the lip condition to be independent of the seborrhœa oleosa or the gingivitis; since no sebaceous glands are present in the lip he asks whether this could be a true seborrhea; cases of exfoliation of lip are extremely rare, but he considers this case as such; present case of very long standing. Dr. Pisko said the process on the face and gums had no connection with the lip; the latter he considers a beginning epithelioma.

Dr. L. Weiss agrees with Dr. Gottheil, arriving at such a diagnosis by exclusion; seborrhœa exfoliativa labialis, he said, is very rare. Dr. Abrahams coincides with the latter speaker; he thought the gingivitis might be due to plumbism.

Dr. R. Abrahams presented a case showing glandular enlargement of the submaxillary and cervical glands; he thought it to be a case of beginning Hodgkin's disease; he regrets that he could not prepare a blood specimen for examination, but will report at a later date.

Dr. L. Weiss showed the following case; eruption of hard, somewhat flattened papules, single and in groups with scaling, on a highly-inflamed skin, covering both forearms, extensor surfaces; present about six weeks. Dr. Weiss wavered in his diagnosis between an acute lichen and an erythema multiformis, favoring the latter.

Drs. Pisko, Gottheil and Kinch consider it lichen planus; the hyperemia present is often observed in acute cases.

Dr. I. P. Oberndorfer also showed a typical case of lichen planus confined to left forearm and the neck; present about nine weeks; he said he would try the biniodide treatment of Dr. Lusk and report result.

Dr. W. S. Gottheil presented a man, forty-one years of age, showing an area of redness over the right malar bone, about the size of a dollar piece; began three months ago as a papule; the patch is slightly infiltrated, the center pale and the red edges gradually fading into the normal skin; Dr. Gottheil was in doubt whether to call it lupus erythematosus or the condition described as erythema induratum. Dr. L. Weiss saw no distinct erythema, seborrhea or folliculitis, and would not call it lupus; suggestion of Dr. Gottheil well taken. Dr. Pisko thinks it is a beginning lupus.

Dr. Abrahams said that a circumscribed patch, depressed in center, with a tendency to atrophy, as here shown, suggests to him the diagnosis of morphea.

Dr. Edward Pisko showed a case presenting an eruption, of seven years' duration, upon the ankle and on left hand; there is redness and scaling and it is cresentic in outline; he called it tuberculosis cutis; treatment of no avail. In the discussion the diagnosis of parasitic eczema of long standing, probably untreated, was made by the majority of the members.

Dr. Geyser presented a young man who shows edematous infiltration of the right leg; process of seven years' standing; at present the leg is nearly normal in size; at one time it was twice its normal dimensions; the case had been diagnosed by another observer as "elephantiasis." The right scrotum shows marked edema; the skin structure is unaltered.

Drs. Abraham and Kinch see no alteration in skin structure and regard the edema as lymphatic in origin from obscure cause. Dr. Weiss called the condition lymphodermia. Dr. Gottheil spoke of the relation of lymphatic statis and a beginning elephantiasis. Massage was suggested.

Complimentary Dinner to Surgeon-General Sternberg.—A dinner will be tendered to Dr. Sternberg in New York, June 13th, under the auspices of the following representative committee: Drs. Henry D. Holton, Frank Billings, Simon Flexner, A. C. Abbott, James Tyson, J. C. Wilson, W. H. Welch, G. M. Kober, S. B. Ward, R. H. Fitz, F. C. Shattuck, Maurice Richardson, Harold C. Ernst, Victor C. Vaughan, Surgeon-General Rixey, H. M. Hurd, Roswell Park, Lewis S. Pilcher, John A. Wyeth, Abraham Jacobi, Edward G. Janeway, Hermann M. Biggs, Surgeon-General Wyman, William Osler, Chas. G. Stockton and Lewis A. Stimson.

The New St. Bartholomew's Clinic.—The new building for St. Bartholomew's Clinic at 215-217 East 42d Street, which was opened for inspection May 21st, presents many new forms of construction and interior detail which are distinct advances over the usual methods in use generally or even in the more modern buildings of kindred institutions. When the work was originally contemplated it was desired to produce a building which, so far as money could provide and ingenuity invent, would be better than anything heretofore erected and a model in all respects of what a structure for the treatment of medical and surgical cases should be, and the work now completed shows the best type of hospital construction that can be produced under present conditions.

PHILADELPHIA.

Death of Major Brooke.—Major John Brooke, a retired army surgeon, died suddenly from cerebral hemorrhage at his home in Radnor, May 12th, aged seventy-two years.

Medical School Commencements.—The commencement of the Woman's Medical College was held May 21st; that of the Medico-Chirurgical College on May 23rd. Jefferson holds its exercises on May 29th.

Medico-Chirurgical College.—Dr. E. R. Kirby has retired from the chair of genito-urinary surgery.

Site for Almshouse.—The Petty's Island scheme is again being revived in connection with the proposed removal of the Almshouse and Hospital for the Insane. This site has been under discussion for some years and has been the subject of heated arguments. Superintendent Geary is quoted as saying: "Petty's Island is the most desirable place for the new Almshouse and Hospital for the Insane, because it has many advantages. In the first place, it is the nearest point that can be reached from all parts of the city; and, secondly, because of its location in the middle of the river, thereby practically isolating it from the city except by ferry. The location also gives it the best opportunity for sanitary draining. If located on Petty's Island, the institution would never be encroached upon or hemmed in by other buildings, thereby reducing its area by others taking its real estate. Less than one-half of the tract would be required at the present time for buildings, and the balance could be utilized for giving employment to such patients as need it."

Site Selected for Municipal Hospital.—A tract of land containing 62 acres on the line between Philadelphia and Montgomery Counties has been decided upon as the new site for the Municipal Hospital. The new site is seven miles from the City Hall, more than twice as far as the present institution. The site will cost $115,000.

American Orthopedic Association.—A cordial invitation is extended to the medical profession to attend the meetings of the American Orthopedic Association to be held on the tenth floor of the Hotel Walton, Broad and Locust Streets, Philadelphia, on June 5, 6 and 7, 1902. An evening with the Plaster-of-Paris Bandage will be held in the Amphitheater of the Jefferson Hospital, 1020 Sansom Street, on June 5th at 8 p.m., of which the following is the program: Reginald H. Sayre, New York, will demonstrate the method of upright suspension in the application of spinal jackets, and exhibit a rotary plaster saw. R. Tunstall Taylor, Baltimore, will demonstrate the upright and small recumbent kyphotones. John Ridlon of Chicago will exhibit knives for cutting plaster. Harry M. Sherman of San Francisco will exhibit a saw and separator and plaster-of-Paris splints for club-feet to demonstrate a method of anchorage. Robert M. Lovett of Boston will exhibit a frame for the application of plaster jackets, with description of a method of application. Also some bandages and a practical bandage roller invented by Dr. S. Robinson. Louis A. Weigel of Rochester will exhibit a removable plaster jacket and materials for making the same. H. P. H. Galloway of Toronto will exhibit a very simple machine for making plaster bandages. A. J. Steele of St. Louis will explain the advantages of wire gauze in connection with plaster bandages, and will exhibit a saw and skin protector. James K. Young of Philadelphia will demonstrate a method of applying plaster jackets in recumbency. H. Augustus Wilson will exhibit a portable door-extension apparatus for applying plaster jackets; also an apparatus for making plaster bandages; also a circular saw and Reed's cutter.

CHICAGO.

Health Department Weekly Bulletin.—There were seventy-eight fewer deaths last week than the week before and the total, 471, is the lowest in twenty-one weeks. The reduction represents a decrease of 13.2 per cent. in the annual death rate. The principal reduction has been in the age period under five years, a reduction which has been continuous for the last three weeks. Coincident with this has been a steadily improving quality of the milk supply. Of the total 574 samples of milk and cream examined last week in the laboratory only twenty-four, or 4.1 per cent., were found below grade. This establishes a new record in the Milk Division.

Too much untreated hydrant water is still being drunk, notwithstanding the daily bulletins of the Department showing the quality of the lake water. The frequent rains of the last few weeks have produced the usual pollution and eleven deaths from typhoid fever were reported during the week. Deducting two of these, which were contracted elsewhere, the remaining nine typhoid deaths are a wholly unnecessary sacrifice to ignorance or criminal negligence. Boil all hydrant water intended for drinking purposes and continue to do so until all sewage is diverted from the lake into the drainage channel.

During the first seventeen days of the month there have been thirty suicides—a tribute to the evil influence of the influenza poison upon the nervous system. Alienists especially and the medical profession generally are at last aroused to the baleful import of this disease, which has been more or less prevalent throughout the world since the fall of 1889. The large increase in the demand for bacterial examinations in the laboratory during the past fortnight was due entirely to influenza, the bacillus of which is found with increasing frequency, while those of diphtheria, pneumonia and the other germ diseases are diminishing. Aside, however, from the continuing prevalence of scarlet fever and an increasing gravity of the smallpox situation, the public health conditions are fairly satisfactory and a further decrease of the mortality-rate is probable.

As to smallpox, ten out of the nineteen new cases discovered last week were among colored people, and since the first of the year this factor of the population, numbering only 1.3 per cent. of the total, has furnished 35 per cent. of all cases. The colored pastors, physicians, lawyers, and other influential leaders of the race, having been made acquainted with these facts, are taking steps to secure general vaccination and to promote sanitation among their people in order that this stigma may be removed. The situation is less hopeful in other respects. An immigration movement of enormous proportions is flooding the northwest with thousands of the newly-arrived who are passed on from ports of arrival into the interior without any supervision as to their vaccinal condition. Chicago, as the great distributing point, is peculiarly exposed and appeals have been made by the Commissioner to the Federal, State and local authorities to enforce proper precautions at ports of entry to the end that no immigrant or his belongings may leave such ports until vaccination and disinfection have made it certain that they shall not be carriers of contagion into the country.

CANADA.

Medical Legislation in the British Columbia Parliament.—One of the members of this body has introduced rather peculiar legislation into the British

Columbia Parliament. Its substance is to permit some members of the medical profession in the rural and mining districts, who have gone thither from other provinces of Canada, to continue in practice without taking the prescribed examinations of the Medical Council. It is not likely that the profession in the Pacific Province will stand for any such measure of relief. What they purpose legislating for, however, is a change in the constitution of the Medical Council, which will provide for a Registrar outside of that body, as in Ontario, one who is not a member of the Council. This is the outcome of the recent Council elections.

Montreal and Compulsory Vaccination.—The Board of Health of the Province of Quebec has power to compel municipalities to pass a compulsory vaccination by-law. The matter was recently before the City Council of Montreal, but it never even reached a second reading. This action of the civic authorities of Montreal is indeed deplorable, when the facts in connection with the outbreak of smallpox in that city are taken into consideration. In the last outbreak, out of 361 patients, only three bore good vaccination marks; 322 of the 361 had never been vaccinated at all; surely this was proof enough of the great value of vaccination. Some three hundred municipalities of the Province of Quebec have adopted the by-law of the provincial Board of Health making vaccination compulsory, but Montreal will have none of it. That city prefers to spend thousands of dollars caring for smallpox patients.

Montreal Dispensary.—At the fifty-second annual meeting of the Montreal Dispensary held last week, the report of the secretary was submitted and showed that for the past year advice and medical treatment had been extended to no less than 16,675 people. Of this number 11,643 were Roman Catholics and 4,004 Protestants. Considered medically, the report showed that of the total number 8,505 were medical and surgical cases; 2,069, eye and ear; 1,725, diseases of women; 912, nose and throat; 1,983, diseases of the skin; 1,327, diseases of children; 154, dentistry. The balance on hand in the treasury amounted to $3,664.21.

Doyens of Medical Profession in Montreal.—Dr. J. P. Rottot, Dr. D. C. MacCallum and Sir William Hingston, M.D., have been recently highly honored by their professional brethren in Montreal. The first is the Dean of the Laval Medical Faculty; the second, Emeritus Professor in the Faculty of McGill University; the third, Professor of Clinical Surgery at Laval. The occasion was the celebration of their golden jubilee in the ranks of medicine. During the last fifty years only two other celebrations of this character have been held in Montreal. Dr. Rottot had been admitted in 1847, a graduate of the old Montreal Medical College, which afterward became the Victoria, and now is the Medical Faculty of Laval. Dr. MacCallum graduated at McGill in 1850 and for a long time held the chair of obstetrics in that institution. Sir William Hingston graduated from the same institution in 1851 and of late years has filled the chair of clinical surgery at Laval. Sir William has been Mayor of Montreal and is a Canadian Senator.

Insane in Toronto Jail.—According to the report of the special civic committee of the Toronto City Council appointed to investigate the charges made that there were a number of insane people in the Toronto jail who were mixing with criminals, it would appear that the charges have been fully and amply substantiated, as the Committee reports that there are as many as thirty-one insane people housed in that institution in addition to several imbeciles. The report calling upon the provincial authorities to provide proper accommodation for these people has been adopted by the Council, and it is to be hoped that measures will at once be taken to carry out the recommendations of the report, and that the jails of the Province outside of Toronto will also be soon relieved of this class of inhabitant. There are said to be something like eighty insane people in the different jails of the Province.

Toronto Clinical Society.—This society has closed its work for the 1901-1902 year, which has been one of the most successful in its history. At the final meeting, which was held the first Wednesday in May, Dr. A. J. Harrington reported a very interesting and apparently rare case of membranous glossitis, stating that he could find no trace of such a condition in medical literature. It occurred in a child eleven months old, a fine, robust, healthy child. In March of the present year it suffered from an attack of measles. After a slight injury to the cheek, a membrane developed on the tongue which exfoliated on April 8th, the child at that time being profoundly septic. It died the following morning. Dr. Allan Baines reported a severe metrorrhagia in a young girl, sixteen years of age, following an attack of mumps. Dr. Fred. Fenton reported on the use of urotropin in pyuria with very favorable results. Dr. C. J. O. Hastings reported three cases of myxomatous degeneration of the villi of the chorion, occurring in his own practice. All three patients recovered. The following officers were elected for next year: President, E. E. King; Vice-President, G. R. McDonagh; Corresponding Secretary, W. J. McCollum; Recording Secretary, George Elliott; Executive Committee, J. F. W. Ross, J. Orlando Orr, H. A. Bruce, H. C. Parsons and J. T. Fotheringham; Treasurer, G. Boyd.

GENERAL.

Paludism and Mosquitoes.—The Japanese military authorities have just made an interesting experiment in the island of Formosa. One battalion of soldiers was completely protected against mosquitoes during the malarial season. In 161 days there was not one case of malaria among these soldiers. During the same period and in the same locality there were 259 cases of malaria in another battalion which had not been so protected.

Italian Ophthalmological Congress.—The Sixteenth Congress of the Association of Italian Ophthalmologists will be held in Florence, October 12-16, 1902.

Lepers in the Philippines.—The number of lepers in the Philippine Islands is estimated at about 12,000.

Hospital Appointments.—The Atlantic City Hospital has created a new department of gynecology. Drs. E. Marvel and Wm. Edgar Darnall have been appointed gynecologists.

CORRESPONDENCE.

REPLY TO DR. KNOPF.

To the Editor of the MEDICAL NEWS:

DEAR DOCTOR:—Allow me a few lines in rejoinder to Dr. S. A. Knopf, a man whom we phthisiophobes are anxious to convert, because of his splendid work along various lines of study of tuberculosis.

First of all come two points in etymology. A *phobia* is a fear, not a madness, although in speaking of purely nervous fears, the two words become practically synonymous. Phthisiophobia is no more madness than photophobia. I am afraid of phthisis in the same sense that I am of a broken wire. Even if it be proved that phthisis is absolutely non-contagious or that the wire does not carry electricity of high potential, my fear will not have been irrational and it will have done no harm.

Dr. Knopf states, "The word *contagion* conveys the idea that the disease is transmitted by the mere touch of the afflicted individual." This is true only in the most literal sense of the translator. Diphtheria, measles, scarlet fever, etc., are rarely transmitted by touch, but by emanations from the body. Any disease is contagious which has a living cause, either animal or vegetable, unless the organism (1) be eliminated by certain routes and by no others, so that ordinary association with the patient is perfectly safe; or (2) must pass through intermediate stages of existence before it can again infect the human body; or (3) can gain access to the human body and grow therein only when certain predisposing conditions are present.

To say that tuberculosis or any other disease of considerable severity is not "dangerously communicable" implies either that it is not due to a living organism or that none of the three conditions previously stated are fulfilled. Probably neither Dr. Knopf nor his school disbelieve in the bacillus tuberculosis or claim that it passes through an intermediate, non-infective stage or that it escapes the body by routes that do not admit of ready infection of fomites. Harold Coates (*Therapeutic Monthly*, Jan., 1902) examined the dust from a series of houses, always avoiding sites where direct deposition of sputum could have occurred. Of twenty-three dirty houses, with a careless consumptive, twenty-one yielded infectious dust. Of ten very clean houses, with a careless consumptive, five yielded infectious dust. Of dirty houses, not occupied by consumptives, at least for several years, ten were examined with negative results, an observation that is very significant as supporting the theory of phthisiophobes that prophylaxis of tuberculosis must be mainly directed at actually tuberculous men and animals. It is held by Dr. Knopf and his school that the careful consumptive is not a source of danger. This is true to a relative degree, but no degree of forethought and altruism can prevent sneezing and coughing or drooling and occasional reflex spitting during sleep or the abandonment of all precautions in the final stage.

As I understand the contention that tuberculosis is not a dangerously communicable disease, it rests on the empiric evidence that healthy bodies are not especially favorable to the development of tuberculous bacilli and is fallaciously supported by the fact that the slowness of the disease renders it impossible to point out the precise moment and place of infection. Now, while the contagiousness of tuberculosis is not marked for a casual visitor in good general health, the fact that 10 or 11 per cent. of our population die of tuberculosis is a serious matter, and we phthisiophobes regard the existing cases as the cause of the future ones. From a purely sanitary standpoint, the most effective prophylaxis would be the condemnation of all tuberculous animals, human or otherwise, and the thorough disinfection of all fomites. We hold that it is not unreasonable to exclude all extraneous cases from the country and that the segregation of all cases with discharge of bacilli is the only radical means of vanquishing the disease. As to the economic question in regard to immigrants, it is beyond my power to calculate how much money a person should have to offset the actual damage which he will involve, if tuberculous. Very few immigrants are paupers and, on the other hand, there are very few who are not dangerously near public charity if they can not or will not work. All institutional statistics show this and they would show it to a greater degree if the services of city physicians, dispensaries and hospitals were included. But the real issue is sanitary, not economic.

A. L. Benedict, M.D.

Buffalo, N. Y., May 4, 1902.

A BRIEF PRELIMINARY REPORT ON THE USE OF UREA AT ST. JOSEPH'S SANATORIUM.

To the Editor of the Medical News:

Dear Sir: Following instructions received from a majority of the Advisory Board, the use of pure synthetic urea in pulmonary tuberculosis was begun several months ago. In about 25 per cent. of all cases in which it has been administered, there has been a very marked increase in the amount of urine excreted, forcing the patient to urinate frequently and often, on this account disturbing sleep. The diuresis is not accompanied by an increase in the urinary solids. In those cases in which the use of urea is followed by diuresis, pain in the back, over the kidneys, is a constant symptom, which is at once relieved by discontinuing the use of the remedy. Digestive disturbance, as a result of the administration of this agent has not been noted, contrary to the experience of Harper (Brit. M. Jour., Jan., 1902). The dose employed is fifteen grains, three times daily, increased to thirty grains, three times daily, if diuresis does not occur. This symptom has usually followed doses of thirty grains, three times daily. The remedy has at once been discontinued in every case in which symptoms fairly attributable to it have occurred, provided a diminution in the quantity administered does not relieve the symptoms.

As regards the supposed antituberculous effect of urea, I have at present nothing to offer. It is so usual for patients to improve under proper management in our climate that at best it is difficult to know just what to attribute to the action of any drug employed. I can, however, say positively that a result of the use of urea sufficiently striking to attract my attention has not occurred. E. S. Bullock, M.D.

Silver City, New Mexico, May 12, 1902.

FOREIGN SOCIETIES.

French.

HUMAN ACTINOMYCOSIS IN FRANCE—CHLOROFORMIZATION—POLYMICROBIC NON-SUPPURATIVE OSTEOMYELITIS—ANEURISMS OF THE ARCH OF THE AORTA—HYPERTROPHY OF THE PROSTATE—ON THE CASE OF THE HINDOO XIPHOPAGUS "RADICA-DOODICA."

The French medical societies in Paris have been engaged in discussing a number of important topics.

A. Poncet, of Lyons, at the Academy of Medicine, April 1, 1902, read a paper on Human Actinomycosis in France, which will be of interest in its bearing on this dreadful disease as it occurs in the human race everywhere. Since his last communication on the subject in 1900, he has collected with the aid of M. L. Berard, twenty-one new cases of the disease, of which some have been published by other authors and some by these two collaborators. The cases concerned localizations in cervical and facial regions in the proportion of eighteen out of the twenty-one cases, which, therefore, appear to be the most common seats of it, probably because the contamination takes place through the mouth. The remaining three cases were respectively one of the thorax and lungs primarily, one in the adnexa of the uterus, and one in the anorectal region. In all these patients the clinical diagnosis was confirmed by finding the parasite in the pus as discharged, or in the scrapings of the sinuses. To these twenty-one cases should be added eight more collected in the last two years by Thiéry, of Paris, which are not included in the above twenty-one patients, because the records have not yet been published. They bring the grand total of observations of human actinomycosis well authenticated up to the present time in France to 146, of which seventy-nine were localizations in the cervico-facial region, and sixty-seven localizations in the various viscera. The prognosis is a varied one in this disease and has been outlined by M. J. Duvau, a military surgeon, who has been able to collect the records of 257 cases both in France and abroad. From the records he concludes that the mortality is 2 or 3 per cent. in the cutaneous, 10 per cent. in the superficial cervicofacial, 30 per cent. in the temporomaxillary, 65 per cent. in the abdominal secondary to intestinal lesions, 85 per cent. in the thoracopulmonary, and finally 100 per cent. in the hepatic and cerebrospinal localizations. The great gravity of the visceral type of this disease is due, on the one hand, to the secondary infections which almost always occur with the primary disease, and, on the other hand, to the impossibility of applying a curative surgical treatment because of the serpiginous character of these lesions and because of their extensive infiltration.

RÉNAUT, of Lyons, contributed a discussion on the subject of chloroformization in the presence of heart disease. He stated that in animals destroyed by chloroform, it is impossible by ordinary means to make out the outline of the epithelial cells in the convoluted tubes of the kidney. He thinks that this fact points to the possibility of a change taking place in these cells. From his experiments he concludes that chloroform begins by making the kidneys less efficient for the proper secretion of the urine, a fact which deserves careful consideration because so many people who may be obliged to take chloroform may already be diseased, or more or less exposed to infection. This will, therefore, be a primary reason for preferring ether to chloroform, because the former gives relatively fewer accidents in the course of its administration. It is advisable in such patients to interrupt the giving of the ether from moment to moment, restoring the drug only when the reflexes begin to appear. By proceeding thus, the author has been able in one case to prolong the narcosis for two hours without the subsequent occurrence of vomiting. In another subject anesthesia carried out under the same conditions permitted the patient to aid more or less by his semi-consciousness throughout the operation. Etherization is equally exempt from all inconvenience in patients afflicted with pronounced myocarditis. Rénaut, therefore, estimates that anesthesia by ether is always harmless and constitutes the method of choice for surgical use.

LANNELONGUE, at the session of March 24, 1902, read a contribution concerning nine cases of a grave form of osteomyelitis, polymicrobic but non-suppurative, which he has had the opportunity of observing during the past few years. In addition to its highly acute invasion, it is characterized by the fact that, when the bone involved is opened, instead of true pus, there escapes blood from which it is possible to isolate staphylococci associated with one or more species of germ. This affection has always a very violent invasion, resembling that of severe rheumatism, with a fever of 40° C., sometimes reaching even 41° C., and varying from morning to night by at least 1° C. The subjective symptoms are chiefly extreme pain in the region of the focus of disease, which can be elicited by pressure methodically applied along the axis of the bone and finally localized by this means. These painful phenomena put the neighboring joint at rest, but as a rule the latter is not diseased. Objectively, in general it is possible to find a small tumor over the region invaded. If a bone of the cranium be diseased, this tumor may progress to the point of closing the eyelids. In the head, as a rule, the frontal or the parietal bone is affected. It is strange that throughout the disease there never appears a true abscess. While these local signs and symptoms are present, the general system shows profound alterations; the face is discolored, there are irregular, widespread pains, a small, rapid pulse, sometimes a low grade of delirium, and, unless an operation be done, death appears quite soon, due, seemingly, to a generalization of the infection by the formation of multiple abscesses, bronchopneumonia, pyemia, etc. In regard to the localization of this osteomyelitis, in the nine cases four were in the upper extremity of the femur, one in the lower extremity of the same bone, one in the lower extremity of the humerus, and three in the bones of the cranium. In the majority of these subjects, it was possible to discover the point of entrance for the infection, such as corns, scratches, pimples and the like about the feet. The bacteriological examination of the blood gave the following results: Four times the staphylococcus was associated respectively with the streptococcus, the colon bacillus, with both of these, and, finally, with a short bacillus not yet identified. Only active surgical intervention has rendered a cure in these patients at all possible. Locally, it is true, there was no abscess, and sometimes hardly any tumor; nevertheless the operation was sufficiently indicated by the results of the examination of the bone, especially by that which represents the amount of pain present. Repeated, careful exploration of the bone shows at first very moderate pain, which increases and finally becomes excruciating as the level of the focus is approached. At this point the bone should be opened in two places at least; for example, in the femur at the focus and in the great trochanter.

GUINARD, at the Society of Surgery, March 26, 1902, read a paper on the treatment of aneurism of the arch of the aorta, quoting a paper of Tuffier read at a previous session, in which the latter regretted that in operating on such a case he had not removed the pocket, but had simply tied it off. It is certain that simple ligature of the pedicle of a sacculated aneurism is invariably followed by rupture and a flood of hemorrhage, killing almost instantly. On the other hand, so far as a removal of the sac could possibly go, it is certain that this, too, should be proscribed, because nothing would prevent a similar, fatal hemorrhage. Guinard has performed twelve ligations of the common carotid artery and of the right subclavian artery for aneurisms of the ascending part of the aorta, or of the trunk of the brachiocephalic artery, because this operation is as efficacious in one case as in the other, and, moreover, confusion of these two varieties of aneurisms is extremely frequent. Once in perhaps two instances there exists not only an aneurism of the arch, but also an aneurism of its first large branch. In general it may be said that when there is an aneurism at the base of the neck at the right side, a ligature of the right common carotid and of the right subclavian artery is always indicated, and that as a rule it produces the same effects as extirpation without adding any of its gravities.

POTHERAT read a paper on the question of resection of the vasa deferentia as a means of curing hypertrophy of the prostate, in behalf of **CHARRIER**, who used it especially in the presence of symptoms of retention. One of the patients, who was in a very critical condition before the operation, died a day or two after it. In two other cases the result was rather satisfactory and the improvement in the urinary troubles appeared at the end of ten or twelve days. The fourth patient received no benefit whatever from the operation. In his opinion these examples seemed to prove that the operation is not at all a certain way of curing this trouble.

DOYEN, at the Academy of Medicine, April 8, 1902, reported the case of the twins, namely, the xiphopagus Radica-Doodica, whom he had separated by operation February 9th, and of whom one, Doodica, had died. He presented the following interesting particulars concerning the pathological and physiological anatomy and operative technic. The two girls were not united by any trace of supplementary tissue. There was no "membrane of union." The junction was between the xiphoid cartilage and the umbilicus and was such that in cutting between these two points of the abdominal walls of the two children, it was necessary to expose the two livers, on account of the reduplication of the umbilicus vein, in order to suture one with the other, and thus to reunite the abdominal walls, the diaphragm, the xyphoid cartilages and the skin of each child. The band of union was the result of a drawing-out of the tissues in such a manner that it permitted him to determine that the separation should be made exactly in the middle line. This band showed when the children were in bed in the latero-dorsal position and was from 12 to 14 cm. in height and from 4 to 5 cm. in thickness. Its anterior surface was from 5 to 6 cm. high and its posterior from 10 to 12 cm. Its posterior surface was reduced to a vertical skin mass. If the position of the little girls was changed the bridge of union changed also, so that its anterior face became almost posterior and thus reduced itself to a simple skin line, while the point of tension showed a widening out. The navel of the two children was at the lower margin of this bridge and, when the children were put face to face in contact with each other, appeared like a little round opening. So far as the pathology and physiology of this monstrosity is concerned, no test could be made with methylene blue, in virtue of the symptoms which made it necessary to hasten the operation, because the disease which had attacked Doodica appeared to be threatening Radica. The presence of three large arteries in the bridge of liver tissue in the side of Doodica, and the double fact that Radica had always appeared to develop secondarily to Doodica and was comparatively little affected by the operation, while Doodica was more ill but seemed to be the more resistant, caused him to conclude that Radica received blood in large quantities from Doodica, for which she returned venous blood. Radica showed tuberculosis of the lymphatic glands a long time before Doodica appeared to have tuberculous peritonitis; from which it is concluded that the latter arose from the former by means of the venous blood, or that in reality the disease was acquired by Doodica independently of Radica. On the other hand, she had a temperature before the operation of 39° C., while that of her sister was 37½° C. This seems to show that the fever in Doodica was due to the local inflammatory condition. The separation of the two children was done as an operation of necessity to save if possible the one which was less afflicted by disease. The least loss of blood might have been fatal. For this reason he applied his method of crushing before cutting through the bridge of liver tissue. Photographs were shown of the body of Doodica before and during the autopsy. The abscess in the pelvis and above the iliac regions which caused death was very apparent. Likewise the lesions caused by tuberculosis of the peritoneal cavity which had followed the fibrous form without exudation; the liver, stomach and heart were in their normal situations. Eight days after the operation, Doodica weighed 12.5 kilograms, while Radica weighed 19 kilograms. At the time of report she weighed 25 kilograms, her tuberculous glands in the neck and armpits had been removed, and recovery was probable. By the X-ray it was possible to show that her heart was in the right position, but that the spinal column was deviated to one side, the curvature probably being due to the faulty position in which the child had to lie while attached to her sister.

Physicians Protective Association.—This western company has now established offices in New York City and for the sum of $20 a year try all law suits brought against physicians.

SOCIETY PROCEEDINGS.

SOCIETY OF DERMATOLOGY AND GENITO-URINARY SURGERY.

Stated Meeting, Held April 11, 1902.

The President, R. H. Greene, M.D., in the Chair.

Case of Psoriasis.—Dr. Whitehouse presented a patient who had psoriasis of unusual distribution. Previous to the commencement of this trouble, seven or eight months ago, he had never had any skin disease. The lesions were typical of psoriasis but, in addition, the patient had scabies. The lesions were symmetrically localized on the lobe of each ear. Upon the back of the leg there was an irregular distribution like nævus linearis; the opposite leg was free from lesions. Upon the glans penis the eruption had the appearance of lichen planus. The speaker considered it a plain case of psoriasis with unusual distribution of the lesions. The patient had been taking rhubarb and soda mixture.

Dr. Leviseur thought that such a localization was due to some coincident condition, such as is often seen in psoriasis. He did not believe that psoriasis ever followed any particular line of nerves.

Dr. Whitehouse said that, so far as localization of the lesion was concerned, the case was atypical. He agreed with Dr. Leviseur that psoriasis did not follow any nerve like nevus or zoster, but he thought that psoriasis was somewhat related to lichen planus so far as the history and subsequent course were concerned. Lichen planus follows irritation and scratching, the lesions being distributed along the scratch marks. In the case presented there was nothing to account for the eruption along any particular line. The lesion on the glans penis simulated lichen planus; the papules looked very much like it. He said he would place the patient on the Asiatic pill and white precipitate ointment.

Hard Chancre of the Lip.—Dr. Whitehouse presented a case of a characteristic initial lesion of the lower lip. It was of seven or eight weeks' duration and no history could be obtained as to how it was contracted. As yet no general symptoms have developed.

Dr. Lusk said it was advisable to encourage the appearance of general symptoms. He did not like to use any ointment or greasy substances, but preferred blackwash, which was drying and did not necessitate any cotton application or dressing.

Dr. Kingsbury believed it was necessary to begin general treatment at once because, in this situation, the disease was particularly contagious.

Dr. Cocks agreed with the diagnosis and said he would apply a calomel dressing and then place over it a layer of absorbent cotton and pour over it some collodion. He did not believe one was justified in running the patient down in order to hasten the appearance of the rash; the latter would appear in time.

Dr. Bierhoff had recently seen a case in which there was no doubt that the patient was infected by a glass in a bar-room.

Idiopathic Atrophy of the Skin in Patches.—Dr. Leviseur presented a cast showing this condition. The lesions, eight in number, were of the size of a pin and looked like pits following smallpox. There was no redness nor inflammation. There were absolutely no other lesions to account for the formation of these little depressed scar-like formations. He asked if any present had seen a like condition.

Dr. Lusk said that he had seen lesions of that nature following ecthyma in children of strumous habits. He believed that an infected lesion of that nature occurring in children poorly nourished would be followed by a scar of that kind.

Dr. Leviseur said there was no lesion of any kind preceding this condition; of that he was positive. They developed idiopathically, being the primary affection. It was very similar in appearance to the atrophic streaks which follow pregnancy, or those which occur in people who, having been fat, suddenly become thin.

In Dealing with Syphilis, What Is Due to Ourselves, to the Patients, and to the Community?—Dr. E. L. Cocks wished to have this subject brought before the Society for discussion. He said that, nine years ago, a Mrs. C. came to him with mucous patches upon the tongue. She then disappeared and, two months later, her daughter came with a chancre of the tonsil. Another daughter, eight years old, then appeared with a hard chancre and mucous patches in the mouth. This girl attended school. The doctor asked, Was it his place to report this to the Principal and have the child excluded from school? What should we do in these cases? A discussion upon this topic was brought up five years ago by a prominent colleague and himself regarding the communion-cups. In the Protestant churches, once a month, the wine-cup is passed from one mouth to another, and no attempt, he said, was made to keep it aseptic. In one of the churches in Harlem, one of his patients, with mucous patches in the mouth, happened to be next to him at the altar taking communion. Since that time the doctor had refused to partake of holy communion. He believed such a condition was very dangerous. He referred to another case, a baby four months old, with typical lesions of syphilis. The father and mother were free from any taint. The baby was cared for by a nurse who was in the habit of placing the nipple of the bottle in her own mouth before putting it into that of the baby. In the nurse's mouth the doctor found mucous patches.

Dr. Lusk thought the doctor's duty was clear and simple. He should notify the Principal of the school that the child was under treatment for a contagious disease and then the Principal would have the Medical Inspector informed and he would have the child taken away from school until cured. He had had occasion to do this and it had worked successfully. There was no question of the doctor's responsibility in the matter; it was shifted to the School Inspector.

Dr. Whitehouse said that so far as individual cases went, it was one's duty to do all one could to protect others and, therefore, children should be kept from school. Regarding the treatment of cases of extragenital chancres the rule to wait until the maculæ or roseolæ appeared should be infringed. In the case of the man presented by him the lesion was a typical one and there was no doubt about the diagnosis, and he should begin at once to attempt to dry up the lesion and then place the patient under vigorous inunctions as quickly as possible. He would also impress upon the man the importance of guarding against infecting others. In just these cases he would always begin mercurialization at once and push it vigorously.

Dr. J. Vanderpoel agreed with Dr. Whitehouse in regard to the institution of early treatment in these cases, especially in children who were so liable to infect others. So soon as the diagnosis was made he thought it to be the physician's duty to at once institute treatment. There were times when the diagnosis was in doubt and then it might be necessary to wait until secondary lesions appeared.

Dr. Cocks said that the child he referred to was running around playing with other children, perhaps swapping candy or chewing-gum. He thought she should be isolated. Regarding the early treatment in such cases he would begin the local, but not the constitutional treatment, not only to see the secondary lesions, but also to convince the patient that he has such trouble.

Dr. Bierhoff said that constitutional treatment should be begun as early as possible. He realized the predicament Dr. Cocks was in and he believed that there should be some method by means of which one could enforce the isolation of such patients who are not only dangerous in the schools but also in the streets and at home; the dangers existed in a good many ways outside the mere contact with drinking-cups. This question of extragenital chancre infection has been considered so important that a special chapter was given to that question in a report of the investigations made by the Russian Government. In the Russian Empire there were remarkably large numbers of cases contracted in a nonvenereal manner.

Dr. Lusk said it was understood that Dr. Cocks had exhausted moral persuasion and still the child was sent to school. He believed that the method he suggested would be effective.

A Specimen of Vesical Calculus.—Dr. J. Vanderpoel presented this specimen which he had removed from an alcoholic subject ten days ago by a suprapubic operation which was quite simple. The only thing of interest to which he wished to call attention was that he immediately closed the bladder after the operation. Unfortunately the patient got up a hypostatic pneumonia with purulent expectoration. The wound at this time had almost entirely healed. The stitches were taken out on the fourth day. There was no pus present. The fever that was present was due to the hypostatic pneumonia; the highest temperature reached was 102° F., on the third day; it then fell to 100° F., and has since dropped to normal. The bladder was drained by a sound *à demeure* for one week and a Pathois catheter was then introduced. The calculus was shown very well by the cystoscope and a very good photograph of it was obtained. The photograph was taken by Caldwell several days prior to the operation and it showed the calculus almost of its exact size. The calculus weighed 58 grams and was composed of oxalate of lime and uric acid. A second specimen of vesical calculus was shown by Dr. Vanderpoel. It was interesting in that it showed the nucleus to be composed of carbonate of lime; outside of this, it was made up almost entirely of the earthy phosphates.

Dr. Greene said that there was one point of interest brought out, and that was the question of immediately closing the wound and leaving in the catheter in cases in which the calculus has been removed by the suprapubic route.

Dr. McGowan said that it had always been his custom in healthy bladders, *i. e.*, in which there was no marked change of the mucous membrane and little, if any, pyuria, to close the bladder at once. But, in the cases in which there was a cystitis, with pyuria, he thought it unwise to do so, rather trusting to the granulations to close it.

Dr. Guitéras said he would drain the pus-bladder suprapubically for at least four days. Some sewed these bladders, placing in a gauze drain, leaving it in for two days, with perfect union following.

Dr. Greene believed that it was very unpleasant to drain through the suprapubic wound, owing to the difficulty of keeping it dry and clean. He was informed that the drainage, as devised by Dawbarn recently, worked very well. He asked those present what sort of drainage they found best suited for these cases and also if the position of the patient has anything to do with keeping the wound dry.

Dr. McGowan said that, with the tube of Dawbarn, he had been able to drain the bladder thoroughly; but in order that such drainage should be effective it was very essential that the bladder-walls should be firmly applied about the tube, packing with gauze down through the suprapubic and bladder wound in order to establish complete closure about the tube; unless that be done there will be more or less extravasation of urine by capillary attraction. After describing the method of using the drainage as devised by Dawbarn, he said that with this method the position of the patient had no influence upon the result. In order that success should follow the use of this special kind of drainage, he thought that one should first be taught its use.

Dr. Pedersen had never seen this drainage in operation, although he had heard that it was eminently successful. If the tube were inserted into the bladder and the bladder-wall were closely applied around it, he did not see that much was gained. Following Gibson's idea, he usually invaginated the wall around the tube, making two series of purse-string sutures, the pocket-purse arrangement, and this kept the parts dry. He had seen such a measure succeed and had also seen it fail because the sutures did not hold; however, when the granulations sprang up and fitted snugly about the tube, success followed.

Dr. Guitéras sutured the bladder-wall close about the tube. He said it was interesting to know that in so many cases more urine drained away through the suprapubic wound than through the perineal tube. This he thought due to siphonage.

Dr. Greene said that he recently had a case at the Workhouse Hospital; the man had had some sort of a crushing accident. One kidney had been removed, and a suprapubic cystotomy had been performed; the suprapubic wound had never healed and he had been left with a suprapubic fistula. Later operated upon for hernia, all control of the sphincter of the bladder was lost, the urine continually dribbling. He had been operated upon many times, but without success. A catheter was tied in, but the urine drained along the side of the catheter. He noticed that as long as the patient was up and about the wards of the hospital his urine would dribble out through the urethra; but, at night, when he assumed the horizontal position the urine would escape through the suprapubic opening. As a result of his observation of that case he had made up his mind that the best way to keep the urine from the suprapubic wound was to keep the patient in the semi-erect position.

Dr. Vanderpoel said that the cystitis was but slight and not at all chronic. If the cystitis had been marked he would agree with the opinions expressed, that it was absolutely necessary to leave the wound open. In the patient from whom he removed the second stone there was a great deal of cystitis combined with chronic gonorrhea. In this patient he employed perineal drainage, packing the wound and leaving the bladder open. He could not say that most of the urine escaped through the anterior opening. There was, however, a considerable leakage through the bladder wound, which, notwithstanding, healed nicely. In this instance it was fortunate that he used a perineal drainage, because there was found a periperineal prostatic abscess evidently of gonorrheal origin.

Dr. Guitéras said that in performing prostatectomies through the bladder considerable drainage both through the bladder and through the perineum could be obtained. Of course, in those cases of drainage through the suprapubic tube the siphon method is used and, therefore, more urine comes by that route than through the lower tube in the perineum. One is siphonage and the other leakage. He stated that he had seen a number of cases of prostatic abscess in which there were no symptoms evident; no temperature at all, even in those cases in which he thought the abscess had existed for some time. In one instance he did an external urethrotomy and found one dram of pus, of the existence of which he had not been aware.

Specimen of Calculus of the Ureter.—Dr. Forbes Hawkes presented this specimen, which had been removed from a woman, thirty years old. Two years ago she gave birth to a child and about three or four months after she had had considerable pain in the right side of her abdomen and passed the smaller of the two calculi presented, followed by a little blood, which entirely relieved her pain, and she remained well for several months. Edema of the feet, dyspnea, swollen face, a sort of acne eruption upon the body, loss of appetite and general debility, then began to develop; all these symptoms increased with the diminution in the amount of urine passed. These symptoms lasted for one year; then gradually they all disappeared and she again felt comfortable except for pain in the right side of the abdomen, which was persistent for the four months before operation. She did not fully regain her strength. On vaginal examination what was supposed to be pyosalpinx was found, but the mass felt was of stony hardness. This mass could be felt in the position of the right tube; through the abdomen it could be felt lying half-way between the rim of the pelvis and the body of the uterus, and to the back. A diagnosis was made of calculus of the ureter. The point then arose how to remove this without infecting the peritoneal cavity. The patient was a large woman and the position of the calculus rendered its removal through the perineum or the vagina out of the question. An incision was made below the rim of the pelvis and, with blunt dissection, and by hooking the finger underneath and lifting the mass, the ureter was brought into view and incised and the calculus removed. It was then noticed that no urine flowed through the ureter. It was sutured with black silk and dropped back again and the peritoneum sewn up completely. A perfect recovery followed. One month ago, in making a cystoscopic examination, no urine was found flowing through the right ureter and he thought that the passage of the first stone had caused a stricture and the second stone developed at this site. Gradually the kidney became atrophied and then entirely ceased functionating. The speaker asked those present if they had ever seen as large a calculus of the ureter as the one presented.

Dr. McGowan said he had seen at the Roosevelt Hospital, ten years ago, a calculus of the pelvis of the kidney which Dr. Hartley had removed. This patient had previously been operated upon for caries of the vertebræ. When he came to Roosevelt Hospital, Dr. Hartley operated and found a stone in the ureter which was twice as long as its diameter. It reached from the pelvis of the kidney down into the ureter.

THE HARVARD MEDICAL SOCIETY OF NEW YORK CITY.

Stated Meeting, Held April 26, 1902.

The President, William B. Coley, M.D., in the Chair.

The paper of the evening, "The Surgical Treatment of Bronchiectatic Abscess of the Lung," was read by Dr. Charles R. L. Putnam.

Forms of Bronchiectasis.—Dr. Putnam said that the dilatation of a bronchus might be caused by the pressure of aneurism, of an enlarged bronchial gland, or of any mediastinal tumor or it might be due to a stricture of a bronchus the causes of which were not understood. Numerous bronchial strictures have been found at autopsies. The dilatation of the bronchi may be simply a form more frequently spoken of as fusiform or cylindrical, or it may be sacculated. As a rule the fusiform dilatation of the bronchi is liable to occur in a number of places in the lung when the condition is present. Sacculated bronchiectasis may be single or multiple, but is usually single or at most occurs throughout a limited area of pulmonary tissue. The two forms are often associated, the sacculated bronchiectasis, or so-called bronchiectatic abscess, developing in a fusiform dilatation as the result of the persistence of the original etiological condition with the addition, perhaps, of an infectious agent.

Involvement of both Lungs and Frequency.—Tuffier, the distinguished French surgeon, whose work on surgery of the lungs is very well known, found that both lungs were usually involved in the bronchiectatic process when the bronchiectasis was of the simple fusiform variety. Sacculated bronchiectasis, on the other hand, occurs very seldom in both lungs. The disease is much more frequent than has been thought and becomes progressively worse; no medical treatment does anything more than relieve its symptoms, and, as a rule, it does this ineffectively. After infection of the bronchiectatic cavities has taken place, surgery is the only hope of relief. The only form of bronchiectasis possibly amenable to surgical treatment is the sacculated abscess in connection with the disease. When these cavities become secondarily infected, the secretions may be so intensely foul as to render the patient's life very miserable and to make it almost impossible for friends to be near him. Moreover, the cavities may become septic in character and the resultant absorption of toxic material may cause deterioration of the general health and may even give rise to secondary foci of suppuration, as, for instance, brain abscess. There are excellent reasons, therefore, to justify surgical intervention in such cases, and successful drainage of these cavities will confer very great benefit on the patients.

Symptoms and Etiology.—The pulmonary symptoms associated with bronchiectatic cavities are not very prominent. At times there is a certain amount of dyspnea. The physical signs constitute the main features of the diagnosis. Patients are apt to suffer from a bad taste in the mouth, and this is apt to be followed by tendencies to nausea as the result of swallowing the offensive bronchial secretion. The consequent indigestion is prone to produce irritability of temper and sometimes a condition of hebetude. These cavities occur as a sequela of whooping-cough or as a consequence of latent phthisis; usually their development is absolutely insidious. The first symptom noted is a spasm of coughing followed by the evacuation of a large amount of fluid. The cavity is evidently very insensitive to the presence of secretion and only after it has filled up and the contained material overflows into the neighboring bronchi does reflex coughing begin, during which the cavity is emptied. The odor of the pus may be from sickly sweet to an awful foulness that is almost unbearable. This may be so offensive as to make life in the house with the patients extremely difficult and render a hospital ward almost obnoxious for other patients.

Differential Diagnosis.—The principal conditions that need to be differentiated from bronchiectatic cavities are tuberculous cavities, abscess of the lung, necrosis or gangrene and actinomycosis. It may be impossible to differentiate a tuberculous cavity. Bronchiectatic cavities may become infected with tubercle bacilli and then take on most of the characters of a tuberculous cavity. As a rule, however, there is less fever with bronchiectasis, the patient is not so sick, there is less emaciation, and in ordinary cases no tubercle bacilli can be found in the expectoration. The secretion of bronchiectasis is apt to come up in one large amount at some given time during the day, while tuberculous expectoration has its own easily recognized character. With regard to abscess the history of the case is more acute than that of bronchiectasis, the patient is apt to have a high temperature, the material coughed up is much less fetid and contains portions of lung tissue. These are never present in bronchiectasis. Another source of confusion may be a hydatid cyst. This is however, especially in this country, extremely rare and the lung is not often affected, being the eleventh part of the body liable to be attacked by hydatids. As a rule there is not so much sputum in pulmonary hydatids and if the cysts should connect directly with a bronchus hooklets may be discovered in the material coughed up. When actinomycosis occurs in the lung in connection with the bronchus, the ray fungus may be discovered in the sputum.

Pathognomonic Physical Signs.—The physical signs of a bronchiectatic cavity are sufficient of themselves to distinguish it from other lesions. When the cavity is full there is a dull note on the chest-wall. When it is empty, as is usually the case after a fit of coughing in the early morning, there is tympany. Not infrequently, however, the tympanitic note is modified by a thick infiltration of the cavity walls. This infiltration proves of diagnostic importance when the X-rays are used. While the fluid within the cavity causes very little shadow, the thickened cavity walls may produce a distinct shadow. In twenty-nine cases collected by Tuffier, twenty-one pulmonary lesions were localized by the physical signs in combination with the X-rays. The presence of coarse bronchial râles may show the existence of a cavity, but this does not localize the lesion sufficiently for surgical purposes. Aspiration is often of value, but the needle may easily become plugged or it may cause reflex irritation and cough which will empty the cavity and so prevent aspiration from having its true diagnostic significance. As a rule, when the aspiration needle is used, morphine should be given beforehand in order to quiet the irritability and as far as possible prevent the cough from disturbing the condition. Even under apparently favorable conditions it may be seen how illusory the needle can prove, because Tuffier relates a case in which he inserted the needle to the proper depth, as he thought, in order to tap a cavity and found afterward at autopsy that instead of one cavity there were two, separated by a quarter of an inch of solid tissue, and that his needle had penetrated this isthmus of pulmonary tissue. If the aspiration test prove successful, the needle should not be withdrawn, but the surgical procedure should be conducted with the needle as a guide.

The X-Ray in Diagnosis.—Much was expected from the use of the X-rays for the diagnosis of bronchiectasis, but the expectations have not been realized. Only once so far have the X-rays proved of special diagnostic significance and then because of extensive peribronchial inflammation. Tuffier succeeded in localizing tumors of the lungs and hydatid cysts with the X-rays, but was not so successful with bronchiectasis. It seems probable, however, that with the improvement in the technic of the X-rays for diagnostic purposes and the more expert knowledge of the significance of even slight differences in the shadows of radiograms much more definite knowledge will be obtained.

Medical Treatment of Bronchiectasis. — The medical treatment of bronchiectasis has not proved very successful. The most that can be done is to relieve the symptoms. For the fetid odor, inhalations of creosote have been suggested and have given some satisfaction. The injection of carbolic acid and menthol into the cavity has been suggested, but has not proved satisfactory. Murphy's method of allowing air or nitrogen to fill the pleural cavity to an extent sufficient to produce collapse of the bronchiectatic cavity has been employed, it is said with some success. About 170 cubic centimeters of air or nitrogen should be injected every second or third day. The choice between air and nitrogen does not seem important provided the air is carefully sterilized before being admitted into the pleural space.

Surgical Intervention.—In order to get at the lungs a U-shaped incision should be made and one or more ribs should be excised. The position of the incision will depend on the localization of the bronchiectatic cavity. Sometimes the pleura is adherent, but not always; seventy-five per cent. of the cases in which adhesions of the pleura exist have septic elements in the abscesses. Unless the bronchiectasis is quite superficial, however, adhesions in the pleura seldom exist. If the pleura be normal, the wound should be packed until adhesions have taken place. If the lungs should collapse during operation it would be practically impossible to find the locality in which the cavity existed. Instead of waiting for adhesions the two pleural surfaces may be sewn together, but very superficial stitches must be used to avoid the danger of sepsis. Beck has suggested that all cutting into the lungs be done with the actual cautery. The danger of bleeding is quite a serious consideration in these cases. In a chronically inflamed lung, vessels as large as the radial arteries may be present. The cautery should not be heated very hot, but kept at a dull red heat, which compels very slow progress in the incisions, but sears the bleeding tissues. In the end time is saved because there is no bother with the control of hemorrhage. The cautery becomes coated with material and must be withdrawn every few moments in order to burn it clean; this lengthens the operation materially, but is the safest method of procedure. After the use of the cautery to evacuate the bronchiectatic cavity, healing is apt to be slow. It may take any time from two and one-half months to two years. In the abscesses with long course there is apt to be the complication of secondary infection with tubercle bacilli; in cases, however, that do not heal for over a year the patient may be able to return to work after some months.

Irrigation During and After Operation.—The use of irrigation during the operation is contraindicated. By a mistake during the course of Dr. Putnam's operation, his assistant allowed some water to flow into the wound and some blood and water appeared in the mouth. This did not seem to produce any serious effect, however, and did not set up the spasmodic coughing that might have been expected. For washing out after the operation mild solutions should be used. A very curious thing occurred in the practice of a Los Angeles surgeon: He operated upon a bronchiectatic abscess, and as the patient was very much run down, the pulmonary tissues refused to heal kindly. The patient was advised, therefore, to be much in the open air and accordingly went to live on a ranch. While away from the doctor the patient used a very strong solution of bichloride, of course, without the doctor's advice, and in spite of the evil effects that might have been expected to follow began to improve almost at once and when he came back to consult the physician after six months the lung condition was entirely healed.

Illustrative Case.—Dr. Putnam presented a child on whom he had operated. It is three years of age and suffered last year from pneumonia. After the pneumonia a condition of dilated bronchi developed. One of the cavities at least became affected by some septic material and the growth of this made the secretion extremely foul. The odor was so bad that even the mother could not sleep near the child; no one else could be gotten to attend her. The child frequently vomited as the result of this foul odor and emaciation set in. The largest sized cavity was localized partly by physical signs and a small deepening of the shadow under the X-rays. An incision having been made down to the pleura, an aspiration needle was inserted in several places until finally several drops of very foul-smelling secretion were obtained. Using the needle as a guide the cautery was employed to evacuate this cavity. The cautery had to be inserted to the depth of about two inches, but the lung in its contraction drew well inward towards the needle. The cavity proved not to be larger than a raspberry. During the operation some blood appeared at the mouth and the operation was stopped. For a week after this operation the patient was somewhat better, coughed up less material and this was much less offensive. After a time, however, some of the old symptoms reasserted themselves and the patient suffered from diarrhea. After this had been improved another operation was done, the cautery being inserted still deeper into the pulmonary tissue and another small cavity being evacuated. Since then the patient has constantly improved in health and the expectoration is no longer offensive. The lung still contains on both sides a number of bronchiectatic dilatations, but the child has improved so much in general health that the parents consider her cured. From a moping child without ambition, she has now become lively and active and is no longer as irritable as before. There is still considerable secretion, but it is of mucous character, containing no bacilli and it is not offensive in odor.

Surgical Intervention.—In discussing the case Dr. Schram said that as bronchiectasis is hopeless of treatment by medical means, it is indeed gratifying to find that surgery may be of some benefit. Dr. Schram considers that, besides the differential diagnosis of conditions mentioned, it is necessary to exclude localized empyema in order to avoid error. He does not consider that the X-rays can be of much benefit in these cases and certainly no surgeon would feel justified in operating with no more reliable data than those given by the ordinary radiograph.

X-Rays in Bronchiectasis.—In closing the discussion Dr. Putnam said that it is not the fluid in the bronchiectatic cavities which causes the shadow in the radiograph, but always the peribronchial inflammation. It is then only in reasonably long-standing cases, in which a considerable inflammatory reaction has led to thickening of the layers of the bronchiectatic cavity, that there is hope in the diagnostic value of the X-rays. In the present case, however, there was an area of distinct deepening of the shadow; not enough in itself alone to justify operation, but sufficient to direct the insertion of the aspirating needle and thus ultimately lead to the detection of the exact location of the cavity sought. In this case the selection of the cavity to be drained in preference to others was influenced by the fact that after a number of impressions of the needle, this was the only cavity that contained an extremely fetid secretion. It is important that the operation be done with a cautery at a low heat. It took twenty-five minutes to burn a way into the tissues for two inches in this case, but there was no bleeding and no other complication of the operation. The patient was examined by those present and proved to be in excellent general condition despite the existence of some bronchiectasis in both lungs.

Gangrenous Appendicitis; Two Typical Cases.—Dr. John B. Walker gave the details of two typical cases of gangrenous appendicitis in which prompt surgical intervention probably saved the patient's life. In neither case was there very much to call attention to the dangerous condition that existed, and it was only the prompt submission of the patients and their physicians to the realization that such cases belong essentially to the surgeon that gave the opportunity for the saving of life. The first patient was operated on after there had been about thirty-six hours of diarrhea with some febrile temperature and some not very marked pains on the right side. The temperature was about 100° F. and the pulse scarcely more than 90 when the symptoms were worst. About 3 P. M. of the second day the temperature fell to normal and the condition was diagnosed as a simple catarrhal appendicitis and all danger considered to be over. At 11 P. M., when the physician saw the patient, he was resting quietly and there seemed no reason to anticipate any serious turn in the disease. Just as the physician was preparing to leave the house, however, there was a sudden cry from the patient, who was taken with severe pain in the appendiceal region; in a few minutes a chill developed and the temperature ran up to 101° F.

Treatment of the Condition.—There seems to be no reason to doubt that some serious process more or less fulminant in character was at work in the neighborhood of the appendix. Two hours afterward, therefore, the patient was operated upon after due preparation, and the appendix was found gangrenous and on the point of perforation. The appendix was removed, the patient made a good recovery and there have been no symptoms since. In this case there was no history of any previous attack and no symptoms pointing to any inflammatory condition existing in the right iliac fossa. The patient was without the usual history of precedent consultation and it would have been very difficult to assign any reason for the occurrence of the gangrene, except that an insidious inflammatory process had gradually led to the shutting-off of the blood-supply of a rather long appendix.

Fulminant Insidious Case.—The second patient with a similar history was a woman of thirty-five who, with no previous history of any appendiceal symptoms, was taken with a pain in her right side. She bore this for some time and, as it seemed to be somewhat relieved, she went out on an errand. The pain became very severe and nausea set in, so that she was compelled to return to her house and take to bed. When first seen she had a pulse only very slightly above normal and practically no temperature. The pain had, however, become exquisitely severe and there was marked tenderness over the appendiceal area. Suspicions were aroused, therefore, of an acute affection of the appendix, and careful leucocyte counts were made. The first showed 13,000; a second count, made about six hours later, showed a still higher leucocytosis, the number reaching 17,000. At this time the pulse-rate was less than 75 and the temperature was about 99.2° F. Notwithstanding the patient's good general condition and the absence of any disturbance of the pulse or temperature, the intense pain and the presence of the leucocytosis seemed to justify at least an exploratory operation. An incision was made in the right iliac fossa and the appendix was found enlarged, tense, with exudative material, covered with lymph and gangrenous at its base. The specimen was submitted by Dr. Walker for inspection. The lesson of these cases would seem to be that when there is a strong suspicion of the existence of tuberculosis, if the patient be in favorable conditions for an operation, life will be saved and no added risks incurred if the surgeon proceeds to make at least an exploratory incision.

In discussing Dr. Walker's cases, Dr. Coley said that fulminant appendicitis of the gangrenous type is an extremely difficult problem to deal with, and Dr. Walker's cases are illustrative, not only of this difficulty, but of a very happy solution of it.

Suprapubic Varicosities.—Dr. William B. Coley gave some details of a case of varicosities occurring in the lower part of the abdomen just above the pubic region in the veins of the abdominal wall. This form of varix is extremely rare; in all the patients with varicosities who have come to the Hospital for the Ruptured and Crippled in about fifteen years only two other cases have been reported. The patient was a boy of eighteen who had also some varicosities of the leg. The tumor produced by the varicosities was so large that the patient had to wear an abdominal belt. The young man had suffered from attacks of pain in the right iliac fossa and some febrile temperature that indicated the existence of recurrent appendicitis. The operation for the relief of the varicosities and that for the chronic appendicitis were done at the same time. The appendix was found completely buried in lymph and bound down, and it was evidently only a question of time when there would have been severe acute exacerbation with probable rupture and the production of pus. The varicose veins were removed by excision and ligature. There is no typical operation for this form of varicosities described in any of the text-books. It seems not improbable that the condition will recur, since there seems to be a tendency for the veins in various parts of the patient's body to dilate very easily whenever there is any back pressure in them. The condition of the patient since the operation has been very good, and relief from the bothersome symptoms due to varicosity can be expected for several years at least.

NORTH BRANCH PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, Held April 17, 1902.

The President, A. M. Eaton, M.D., in the Chair.

Microscopic Diagnosis of Blood Abnormalities.—Dr. W. Wayne Babcock stated that there were four things to be considered in this connection: (1) The amount of hemoglobin; (2) the number of red blood-corpuscles; (3) the number of white corpuscles, and (4) the determination by a method of staining and microscopical examination of the shape and quality of the corpuscles. The estimation of the hemoglobin by the use of the Talquist scale was thought to give sufficiently correct results for general purposes, and when more accurate results were required Gower's instrument was recommended. For general use in estimating the corpuscular richness of the blood Oliver's instrument was recommended, and when a more accurate result is desired, of course recourse will of necessity be had to one of the counting methods. Attention was directed to the importance of having the blood spread very thin on the slide, as well as to the necessity of having the skin perfectly clean before the puncture is made. Before staining the blood should be set on the slide either by heating or by some chemical process. The various methods of staining were given in detail, and as part of the information to be gained by this examination were enumerated the character, size, and shape of the red cells and whether nucleated or not, thus indicating the anemic or other character of the patient. Apart from this, the observer is also able to obtain a fairly accurate idea of the number of white corpuscles present and draw deductions therefrom, which information is particularly valuable in cases such as tumors, in which it is not known whether it is an abscess or some other kind of a growth, the indications being very much in favor of the former if the number of white cells be increased. The differential diagnosis of typhoid fever and appendicitis was also cited as an instance in which this information might be particularly valuable. The method of staining by the use of Ehrlich's triple stain was especially commended for its simplicity.

The Use of Simple Microscopic Methods.—Dr. Robert L. Pitfield urged the importance of more general use of the microscope in order to confirm the clinical diagnosis. Attention was directed to the necessity of the examination of sputum in all cases in which tuberculous involvement was suspected, the method recommended being staining with carbol-fuchsin and methylene blue. Numerous cases were cited, which had come under the author's observation, in which the diagnosis was established solely by this means. Attention was directed to the value of a thorough microscopical examination in conjunction with the chemical urinalysis in the diagnosis of nephritis, and a case was cited in which a careful microscopical examination of the sediment by staining had revealed the presence of tubercle bacilli, although the patient presented no other symptoms of tuberculosis. In the differential diagnosis of diphtheria and tonsillitis, the reader expressed the opinion that about 72 per cent. of the cases could be correctly diagnosed by the examination of a simple smear of the discharge from the throat; while the use of the culture was recognized as a more certain method, it was thought that the latter procedure was beyond the reach of the average practitioner. The value of the examination of the stools and of the discharge in cases of suspected venereal disease was also commented upon.

The discussion was opened by Dr. Judson Daland, who stated that he believed that Fleischl's hemometer modified by the little slit cap was the best method of estimating the amount of hemoglobin. In regard to the estimation of the corpuscular richness of the blood, he stated that, while a great step in advance had been made in this direction, he felt that there was still much to be desired so far as accuracy was concerned. Regarding the microscopical examination of the blood the speaker stated that he had given considerable attention to the examination of fresh blood, which he did not feel was practised to as great an extent in this country as might be desirable. In his opinion much valuable information could be obtained by observing the manner in which crenation and rouleauing take place and the manner in which the fibrin is formed. The importance of spreading the blood very thinly on the slide was commented upon and the fact noted that it was possible to conduct the examination for from twenty-five to thirty minutes before crenation interfered. This method was also recommended in searching for the malarial parasite and the spirillum of relapsing fever.

The speaker cited a case which had recently come under his observation presenting all the physical symptoms of pulmonary tuberculosis, but in which the sputum, although frequently examined by different observers, showed no tubercle bacilli. The case eventually proved to be one of aortic aneurism.

Attention was directed to the diagnostic importance of considering the clinical symptoms in conjunction with the results of urinary examinations, and a case was cited in which examination of the urine after an operation for a dislocated kidney had been performed by fixing it to the posterior wall of the abdomen with three sutures, revealed both the chemical and microscopical symptoms of hemorrhagic nephritis, which disappeared in a few days.

Laboratory Methods.—Dr. Frederick A. Packard remarked upon the contrast between the present laboratory methods and those in vogue about twenty years ago. At that time the urinary examination consisted in a test for sugar and albumin and a microscopical examination for casts, mucus and pus. Only on rare occasions were blood-examinations made, the principal instrument in use at that time for the estimation of the hemoglobin being Gower's. While at the present time, it is possible to discover a number of bacteria in the sputum and thus gain assistance in a variety of diseases in addition to tuberculosis, such as pneumonia and gonorrhea, at that time the tubercle bacilli and yellow elastic tissue were the only objects searched for. Attention was directed to the importance of the examination of the stools, and especially was this thought to be important in cases of children who were supposed to be suffering from worms. The value of the Widal reaction, and the examination of the exudate from the throat as a means of differentiating between typhoid fever and diphtheria was remarked, as was also the importance of lumbar puncture and the examination of the fluid in cases of tuberculous meningitis. The liability of error in making the diagnosis of Bright's disease solely upon the presence of albumin and casts in the urine was commented upon and the importance of considering these factors in conjunction with the clinical symptoms was remarked. When albumin is persistently present in the evening urine and absent or present in very much smaller amount in the morning specimen, it was thought to suggest either stone in the kidney or movable kidney.

Blood-Examination in Malaria.—Dr. Joseph Sailer emphasized the importance of this, and stated that he considered examination of fresh blood of much value. In the opinion of the speaker the Widal test will give a positive reaction in 95 per cent. of all the cases of typhoid when but a single test is made during the early period of the disease, while if the tests are continued at intervals during the progress of the affection the proportion will be very much larger. Reference was made to the importance of microscopical examinations in differentiating diseases due to the colon group of bacteria, and attention was called to the regularity with which cholera is diagnosed by this method in the Orient. The investigations of Bordeaux with the various blood-serums were referred to and their value in medico-legal work, as well as their diagnostic importance, was remarked upon.

Dr. Augustus A. Eshner considered that in cases in which albumin and casts are present in a patient's urine, a distinction should be made between the cases in which they are constantly present and those in which the condition is transitory, as in the latter instance he feels that but little importance should be attached thereto. In regard to the estimation of the corpuscles in the blood, the speaker stated that his experience had been principally with the Thoma-Zeiss instrument and that for ordinary purposes he considered that not only can one estimate the number of red cells, but one can also form an approximate idea of the number of white corpuscles by the use of this instrument. In cases in which diphtheria is suspected the speaker stated that he believed it was just as important to examine the nasal discharges as the exudates from the throat, as in his opinion nasal diphtheria is not so rare as is sometimes supposed.

Urine Examination.—Dr. M. H. Fussell remarked upon the great value to be derived by the general practitioner from the examination of the urine of his patients, as in his opinion many cases of Bright's disease and other affections are not recognized until it is practically too late to be of any service to the patient, when the physician depends entirely upon the clinical symptoms. The speaker also stated that in his opinion in every case of a chronic cough the sputum should be examined, even although the physical signs of tuberculosis do not happen to be present. In the examination of the exudates from the throat for the diphtheria bacillus, he felt that cultures are far more accurate than the microscopical examination of a simple smear of the discharge on a cover-glass, and he does not feel that it is safe to exclude the disease even although a negative result is obtained by the latter method. The Talquist method of estimating the hemoglobinular richness of the blood was referred to and while it was admitted that it was not so accurate as the Dare or the Fleischl method, the advantage claimed for it was that it takes but a very short time and is sufficiently correct for the majority of cases. In all cases in which malaria is suspected it was recommended that a microscopical examination of the fresh blood be made.

BOOK REVIEWS.

The American Year-Book of Medicine and Surgery. Being a Yearly Digest of Scientific Progress and An Authoritative Opinion in all Branches of Medicine and Surgery, Drawn from Journals, Monographs and Text-Books of the Leading American and Foreign Authors and Investigators. Collected and Arranged Under the General Editorial Charge of George M. Gould, M.D., Vol. II., Surgery. W. B. Saunders & Company, Philadelphia and London.

This year's volume of the American Year-Book on Surgery is very well made. The only change in the list of contributors is due to the absence of Dr. W. W. Keen from the United States, and he is very well replaced by Dr. J. Chalmers Da Costa. There is an excellent review of the various operative procedures for cancer; how radical these are may be judged well from the description of Lennander's method of removing cancer of the breast. The incision for this method begins at the ensiform cartilage and is carried to a point just below the head of the humerus. Notwithstanding the extensive operations that are performed, the prognosis for cancer cases operated upon is not very promising. It is evident that successful investigations giving the cause of cancer and the possible prophylaxis of the affection will be supremely welcome. The present volume contains chapters on obstetrics as well as on gynecology, and some of the recent literature reviewed will be found of very practical significance. There is the report of a case of xiphophagus twins who were separated by operation. The band joining the children was of greater extent than that of the famous Siamese twins. Not only the livers, but also the pleuræ, the pericardial sacs and the mesenteries of the two children were found to be continuous. One of the twins has survived the operation for many months; the other died at the end of six days. In the case of the famous Siamese twins the existence of a portion of liver tissue in the band uniting them, deterred surgeons from making any attempt at separation.

There is an excellent discussion of menstruation and its disorders that is of importance not only for surgeons but medical men generally. Some of the newer ideas from comparative physiology, and the question of the influence of the thyroid and its extracts on the sexual and menstrual life receive due notice.

Syphilis, A Symposium. E. B. Treat & Co., New York.

This little book includes a series of contributions from men who are well known specialists in syphilology and contains some very interestingly practical material. Professor Fournier of Paris discusses the clinical characteristics of syphilitic chancre; Dr. L. Duncan Bulkley of New York discusses unrecognized syphilis of the nervous system; Dr. J. D. Thomas of Pittsburg tells how best to diagnosticate communicative syphilis in a wet-nurse; Dr. Robert H. Greene of New York discusses the treatment of syphilis. Most of these subjects have come to be of even more practical importance than ever in recent years. The gathering together into a little book of this kind of a series of papers that show various aspects of the subject seems commendable, and the book will doubtless prove a suggestive manual for general practitioners to whom problems in syphilis come rarely, yet must be answered.

Hand-Book of Bacteriological Diagnosis for Practitioners. Including Instructions for the Clinical Examination of the Blood by W. D'Este Emery, M.D., B.Sc., London, Lecturer on Pathology and Bacteriology in the University of Birmingham. P. Blakiston's Sons & Co., Philadelphia.

General practitioners are coming to recognize more and more the necessity for definite bacteriological knowledge if they are to employ properly those diagnostic aids that the development of the new science of bacteriology has recently brought to medicine. Dr. Emery's hand-book would seem to supply the information needed in a very simple, concise yet complete manner. Each of the infectious diseases is discussed as completely as seems necessary for diagnostic purposes, and the colored plates give an excellent idea of the appearance of bacteriological specimens. There is a number of such books for the profession, but Dr. Emery's book will find a place for itself because of its suggestive brevity, yet thoroughly practical and scientific character.

Directions for Class Work in Practical Physiology. Elementary Physiology of Muscle and Nerve and of the Vascular and Nervous Systems. By E. A. Schafer, LL.D., F.R.S., Professor of Physiology in the University of Edinburgh; Formerly Jodrell Professor of Physiology in University College, London. Longmans, Green and Co., New York, London and Bombay.

This book is compiled especially for the medical student's use in the laboratory, the material having been used for this purpose in the University College of London for many years. It is written in a very clear and concise manner, in large type and upon very good paper. It gives explicit directions which are illustrated by diagrams and are sufficiently clear to direct the work of the average medical student in the elements of experimental physiology. Among the experiments given may be mentioned the effect of heat, cold and certain drugs, such as curare and veratrine on muscular contractions; also the effect of fatigue and the extensibility of muscle upon the character of its contraction; the rate of transmission of nerve impulses; Pflüger's law and numerous experiments upon the heart muscle, ending with that of perfusion of the frog-heart.

Manual of Physical Diagnosis for the Use of Students and Physicians. By James Tyson, M.D., Professor of Medicine in the University of Pennsylvania and Physician to the University Hospital; Physician to the Philadelphia Hospital. P. Blakiston's Son & Co., Philadelphia.

For several years this convenient manual has been relied upon by most students of medicine for their guidance in laying a foundation for the study of physical signs and in the appreciation of the value of a thorough examination of the patient. Almost all mistakes in diagnosis depend not so much upon the ignorance of the physician as upon his lack of thoroughness and systematic examination which will reveal signs that are easily appreciated by any physician if his attention be called to them. One of the great benefits, therefore, to be derived from this book is the training which it affords the mind of the medical student in pursuing a thorough and careful examination of the patient. Only a small amount of new material has been necessary to bring this edition up-to-date, for it has followed the third edition so closely; but numerous revisions have been made throughout the work and short chapters upon blood, sputum and stomach-contents have been written. Its usefulness is not by any means confined to the student, for the various diseases of the heart and lungs are exposed in a very simple but complete manner.

A Brief Manual of Prescription Writing in Latin or English, for the Use of Physicians, Pharmacists, and Medical and Pharmacal Students. By M. L. Neff, A.M., M.D. F. A. Davis Company, Philadelphia.

Many medical and pharmacal students have never had a Latin education, and even those who have are likely to forget the details of declension and conjugation. In prescription writing only a very small knowledge of Latin is required, at any rate, and can be easily mastered by any one if the essential points be explained and illustrated. This book gives a very simple presentation of the subject, enabling a person to write an intelligible and correct prescription. A small Latin-English vocabulary with Latin phrases and their abbreviations is appended. A list of incompatibles and a table of doses of remedies most frequently administered are also given.

When it is recalled that many of the complex reactions in the human body are brought about by the action of ferments, it is manifest that all the light that can be obtained on their peculiar properties is necessary in order to unravel many of the unknown secrets of digestion, of the action of the internal secretions of the pancreas, of the adrenal gland, of the thyroid, perhaps of the spleen, and of the blood. While the ferments of the human organism are not here dealt with in detail. the general conceptions of enzyme action are so well sketched that this work would make for the thoughtful practitioner an excellent introduction into a fascinating field.

The Treatment of Neurasthenia. By A. Proust, Professor at the Faculty of Medicine in Paris, and Gilbert Ballet, Professor Agregé at the Faculty of Medicine in Paris. Translated by Peter Campbell Smith, Henry Kimpton, London.

Proust and Ballet's volume on the Treatment of Neurasthenia is very well known in the original French. It is an eminently practical little work and is typical of the French tendency to give detailed practical hints in therapeutics.

An extremely interesting feature of the book is the fact that the authors give due credit to American writers for their important original work with regard to neurasthenia. They mention the essays on various nervous conditions evidently of neurasthenic character that preceded Beard and Weir Mitchell's work, but give these observant clinicians due credit for priority in the principal parts of the field. One of the most important chapters in this little book is that on Prophylaxis, which includes the physical and moral education of children who are liable, because of heredity, to become the subjects of neurasthenia.

Lectures on Chemical Pathology in its Relation to Practical Medicine. Delivered at the University and Bellevue Medical School, New York City. By C. A. Herter, M.D., Professor of Pathological Chemistry, University and Bellevue Medical School, New York. Lea Brothers & Co., New York and Philadelphia.

This book is a memorable one. Gathered as it has into an easy and convenient compass the fundamental facts of perverted chemical activities resultant from disturbed physiological functions, it is the only work of its kind. It is a pioneer in the field and a worthy leader.

Little by little it is beginning to be realized that the medical questions of the future are to concern themselves more and more with cell chemistry and the "cellular pathology" of Virchow is to be replaced by the "cellular chemistry" of many modern Masters. At the present time the facts are being gathered, generalizations of a wide and important nature will follow; but of the work of the present day, of the chemical defences of the human body, the chemical fate of the body foods, the iron of the blood, putrefactive and fermentative processes, pathology of gastric digestion, chemical pathology of hepatic disease, diabetes, starvation, undernutrition and obesity, there has been no authoritative and really modern exposition before the appearance of Dr. Herter's work.

We foresee thousands of original articles flooding the medical journals of this country derived from this book and we can almost hear the lecturers in the medical schools of the country pouring forth interesting facts culled from this work, which is a veritable *vade mecum* of sound practical teaching based on the most intricate and scientific chemical research.

We are prepared to state that from the standpoint of the understanding of the problems here dealt with that no work in any language is its equal and we almost hold it to be a duty to himself and his conscience that the progressive practitioner should know its teachings since they are so readily available.

BOOKS RECEIVED.

The Medical News *acknowledges the receipt of the following publications. Reviews of those possessing special interest for the readers of the* Medical News *will shortly appear.*

Philadelphia Hospital Reports. Vol. IV., 1900. 8vo, 322 pages. Illustrated.

A Manual of Toxicology. By Dr. Albert H. Brundage. 12mo, 354 pages. New York.

The Medical Treatment of Gall-Stones. By Dr. J. H. Keary. 12mo, 125 pages. P. Blakiston's Son & Co., New York.

Laboratory Work with Mosquitoes. By Dr. William N. Berkeley. 12mo, 112 pages. Illustrated. Pediatrics Laboratory, New York.

The Case of Destitute, Neglected and Delinquent Children. By Homer Folks. 12mo, 250 pages. The Macmillan Company, New York.

Laboratory Guide in Elementary Bacteriology. By W. D. Frost. 8vo, 355 pages. Illustrated. Published by the author, Madison, Wis.

Essays and Addresses. By Sir James Paget. Edited by Dr. Stephen Paget. 8vo, 445 pages. Longmans, Green & Co., New York, London and Bombay.

Einführung in die physikalische Anatomie. By Dr. Hermann Triepel. 8vo, 232 pages. Illustrated. J. B. Bergmann, Wiesbaden. G. E. Stechert, New York.

Atlas and Epitome of Otology. By Gustav Brühl. Edited by Dr. S. MacCuen Smith. 8vo, 292 pages. Illustrated. W. B. Saunders & Co., Philadelphia and London.

Die otitische Ekrankungen des Hirns, der Hirnhaute und der Blutleiter. By Dr. Otto Körner. 8vo, 216 pages. Illustrated. J. F. Bergmann, Wiesbaden. G. E. Stechert, New York.

Atlas and Epitome of Operative Surgery. By Dr. Otto Zuckerkandl. Edited by Dr. J. Chalmers Da Costa. 8vo, 410 pages. Illustrated. W. B. Saunders & Co., Philadelphia and London.

Traité de Médécine et de Thérapeutique. Tome IX. Maladie du cerveau, de l'isthme, de l'encephale, des méninges encéphaliques, de la moelle epinière, et des méninges spinales. Edité par P. Brouardel et A. Gilbert. 8vo, 996 pages. Illustrated. J. B. Baillière et Fils, Paris.

THE MEDICAL NEWS.
A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. 80. NEW YORK, SATURDAY, MAY 31, 1902. No. 22.

ORIGINAL ARTICLES.

A CONTRIBUTION TO THE SUBJECT OF INFANT-FEEDING.[1]

BY S. HENRY DESSAU, M.D.,
OF NEW YORK.

IN any discussion of the subject of infant-feeding, there are two most important points that the medical profession should clearly recognize. First, the great responsibility the medical attendant is compelled to assume in adopting and advising any methods that later can possibly be perverted by the masses or lower classes of the community to the subsequent detriment of infant health and life; and, second, the development of the fact that the action of a certain degree of heat, from 140 to 160° F., when applied to cow's milk, renders the casein or curd more digestible, without injury to other valuably nutritious elements, at the same time rendering the food practically free from contamination of any disease germs it might accidentally convey.

Attention is directed to the first point for the reason that such advancement as has been made in our knowledge of artificial infant-feeding appears to have led to more and more complicated methods which are not fit to be entrusted to the weak intelligence of the proletariat; whereas, in order to obtain the greatest good with least danger of eventual harm to the innocent child, only the simplest methods should be aimed at. It is true that mankind has made gigantic strides in civilization, but it is also true that there remains as much ignorance or lack of common sense in the community to-day as ever. To illustrate the manner in which this responsibility attaches to results let us take a cursory review of the brief history of the progress of infant-feeding, which is limited to a little more than thirty years. At the beginning of this period, raw cow's milk, either whole or diluted with water, was by general consent adopted as the most available substitute for mother's milk. Owing, however, to the difficult digestion of the large dense clot of casein found in the infant stomach, it proved so deadly in its effects, especially in large cities during the summer months, that some improvement soon had to be made, and the one most favorably advised was the addition of some form of cereal, as barley or oatmeal, to act as a mechanical means of separating the particles of the clot, so as to prevent its becoming too firm and indigestible.

Soon it became distinctly noticeable that the lower classes were using corn-starch freely for this purpose, because it was cheap and easily prepared, and by some process of reasoning, scarcely known even to themselves, many gave it entire as a food, with what destructive results to infant life those of us who were in practice at that time well know. Later on Liebig's food, based on the principle of dextrinizing the starch of the cereals that were to be added to cow's milk, was introduced. This was speedily followed by a host of proprietary foods liberally advertised, most of which contained some preparation of malt that was tempting to the infant's palate and easy to prepare. These were well patronized by the working classes until their general harmfulness became convincing. Evaporated or condensed milk in bulk, as supplied in large cities, was also being recommended about this time, as it proved in fact to anticipate the later introduction of the principle of heating cow's milk to below the boiling point, the value of which will be demonstrated later on. But soon, however, it was observed that there was a large demand among the lower orders of the community for the canned condensed milk, which, by reason of its original purpose of supplying the army and navy with a milk, is altogether a different preparation from the fresh article sold in bulk, and is in every way unsuitable for a daily infant food. The truth of this statement was soon proven to the satisfaction of many observers by the large number of cases of rickets and marasmus seen at the clinics in this city in children who were being given canned condensed milk as a food. The difference between the condensed milk served in bulk and the canned is that the former has always professed to be simply an evaporated whole milk without any additional matter, while the canned or "preserved" article is deprived of a certain amount of fat which, according to Paton[1] of Glasgow, is necessary to prevent rancidity, and also has a large amount of cane sugar added for preserving purposes. Both are condensed to the same bulk.

It was early recognized by those observers, who later became leaders in the study of diseases of children, that the chief obstacle to the use of cow's milk as a substitute for mother's milk was the behavior of the curd or cheese in the infant's stomach, forming, as it does, large dense masses instead of the soft flocculent curd of human milk. This peculiar formation of the curd of cow's milk is incidental to the milk of all cud-chewing animals, and is due not only to the large proportion of proteids, of which casein forms the greater part, in cow's milk, but to the relative proportion of caseinogen to lactalbumin, which is large, being four to one, instead of one-half to one, as in human milk. This, according to Tuttle, together with the greater amount of calcium salts and acids in cow's milk, as stated by Hutchison, explains the density and firmness of the cheese clot. How to remedy or overcome this difficulty was the problem to be solved.

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[1] Read before the Harlem Medical Association, 1901.

[1] Encyl. Brit., Milk.

The progress that had been made in this direction prior to the introduction of bacteriology into medicine was by no means satisfactory, and so much interest was aroused by the study of germs and the prevention of their entrance into our bodies and daily food that when sterilization of cow's milk was introduced by Sohxlet all thought of the original pursuit of study regarding the behavior of the clot seemed forgotten. Fortunately, however, sterilization, or the application of the action of heat for destroying germs, opened up a new and unexpected field of study that has undoubtedly led to a more perfect solution of the vexed question than all the others preceding it. Jacobi, in a recent contribution (Report to the Internat. Med. Cong., 1900), has stated that the one great progress that has been made in infant-feeding these dozens of years is the heating of cow's milk, and, although this may refer to the destruction of germs, nevertheless it will stand as classical authority for generations to come. This is the second point of importance to which attention is invited.

I, as well as Keating[1] and others, had long ago witnessed the good results obtained from the feeding to infants of properly diluted evaporated or fresh condensed milk, and I published my views on this subject in the *Medical Record*, August 25, 1888. At that time and in that article I had reason to believe that this was the whole milk, but since the introduction of the separator I have had reason to change my opinion. The main point that I called attention to in that article was the behavior of the clot. It was observed in the vomit of the infant that the curd of the diluted condensed milk was similar to that of human milk, *i. e.*, of a light, flocculent character. This was attributed by me to some chemical action of the heat in the process of condensation upon the casein. Sohxlet's idea was to kill the germs, but he also rendered the milk so easy of digestion by his process that it more than confirmed my previous speculations.

Sterilized milk, however, as a daily food was not an entire success, owing to the fact that a number of cases of infantile scurvy, previously recognized as a rare affection, soon appeared in children fed for a length of time on this food. Investigation soon showed that the high degree of heat used for the purpose of killing germs was found not only to change the action of the milk-curdling ferment upon the casein of the cow's milk, but it also undoubtedly decomposed the fat, thereby favoring butyric-acid fermentation in the infant stomach, so rendering it less nutritious; it coagulated the albumins, globulins and nucleins, which are the phosphorus-bearing or antirachitic elements, and rendered the calcium salts insoluble by disturbing their combination with citric and phosphoric acid, thereby destroying their antiscorbutic properties.

Largely for this reason Pasteurization of cow's milk, or heating to about 140° F., was introduced, which, according to Prof. Russell of the University of Wisconsin, quoted by Blackader,[1] effectually kills or disposes of 99 per cent. of the contained germs in fifteen minutes, while it does not damage or destroy other vitally nutritious elements and is sufficient to modify the coagulation of the clot under the action of the milk-curdling ferment. Pasteurization as originally presented required, however, a special apparatus which was too expensive and complicated for the ignorant poor and therefore it did not become a popular method. Further study of the subject of infant-feeding led to Rotch's plan of scientific modification or so-called percentage feeding. This required preparation in special laboratories and, outside of its questionable value to the infant, proved to be beyond the means of the lower classes.

In all our efforts to perfect a substitute for human milk, it should always be borne prominently in mind that it is the masses we should seek to benefit and not the classes alone. Therefore, whatever method we, as a body of physicians, advise should be easily within the reach of the purse and intellect of the most humble in the community. There is no intention to cast adverse reflections on any method or process of infant-feeding. Good results in some way, perhaps not always the one originally intended, have been obtained from all. But in this matter we cannot afford to be overscientific. Our conception of the physiological processes of digestion and assimilation can never be reduced to the exactness of a mathematical calculation. The lactometer, the centrifuge, the weighing scales, litmus paper and the graduated glass are all of undoubted value in giving useful aid and information, but they can never be made instruments in the hands of the physician for reforming Nature's own processes.

Just here let it be understood and kept prominently in mind that beyond dispute the best of all foods for the human infant up to the first year of life is human milk. Individual exceptions do not count, and when they do occur their causation should by all faithful endeavors be righted.

The profession is most certainly to blame for neglecting to encourage and insist upon young mothers nursing their offspring or providing a wetnurse when one can be reasonably afforded. It would seem that we are too eager to perfect an artificial substitute, based even on the most scientific principles, to imitate human milk, rather than to make an effort to obtain the genuine article. Whether this is due to a laudable ambition to display our professional attainments, or to a baser spirit of commercialism that pervades the Anglo-Saxon character of to-day, is a question for philosophers to decide; but the fact remains that we do often permit our better judgment to be led astray by alluring statements. When our worthiest efforts to secure human milk for the infant fails, then it is time enough to think of an artificial substitute. At the same time let it be remembered that even a limited amount of breast milk at any period of infant life is of real value when any substitute must be used.

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[1] Practical Lessons in Nursing, 1887.

[1] N. Y. Med. Jour., Feb. 2, 1901.

Notwithstanding the obstacles before mentioned, cow's milk is by common consent accepted as the best and most available substitute for mother's milk that Nature presents. It is for this reason that cow's milk forms, in some manner, part of all the proprietary infant foods on the market, or must be added to them if the child is to thrive. For the same reason more attention has of late years been paid to the better quality and greater care in the handling of cow's milk by dairymen, and the milk supply of large cities has improved through more thorough inspection on the part of city authorities. Whatever method of artificial feeding, therefore, receives the approval of the majority of the medical profession should have in view simplicity and readiness of preparation, together with economy of cost and a most reasonable assurance of successful results. Combined with these, a point of equal importance in determining a fair estimation of its value is the faithful observance of a systematic method of regulating the time and quantity of feeding, proportioned according to the age or weight of the infant. For it should be remembered that overfeeding, either as to time or quantity, may discredit the value of even mother's milk by interfering with normal digestion, oftentimes erroneously attributed to the quality of the milk. This has been pointed out by Hutchison in his recent work on Food and Principles of Dietetics, who cites the fact that frequent nursing not only tires out the functions of the weak infant stomach, but also increases the amount of fat in the mother's milk to that extent as to cause a change in the normal proportions.

For the vast majority of infants of all classes of the community I have for the past six years found that the simplest, cheapest and best food for daily use is a fair average quality of cow's milk, diluted with water according to the age and digestive capacity of the child. The "top milk," or the upper portion of milk that has been allowed to stand in a vessel at a temperature not above 60° F. for from four to six hours, is sometimes preferable. The proportion of fat to proteids is much greater in such milk and will better bear diluting. A pinch of either table salt or phosphate of sodium is added, because cow's milk contains no soda salts, while human milk does, and a heaping teaspoonful of raw cane sugar to the quart. The mixture is placed in a double cooker, with cold water in the outer vessel, and allowed to remain on the fire for ten minutes after the water has begun to boil. This is virtually Pasteurizing the milk, which has become modified by dilution and the addition of salts and sugar. The principal and most important object of this process is not so much to attack germs as it is, as before mentioned, to act upon the casein in such manner that the character of the curd will be modified by the milk-curdling ferment in the child's stomach, analogous to rennet in the stomach of the calf, without doing injury to other nutritious components, as the nucleins, globulins, and calcium salts. This is materially aided by the dilution.

In regard to the matter of dilution, it was long ago recognized that the addition of water alone to cow's milk aided in a measure the modifying of the curd. The greater the dilution the easier of digestion the curd becomes, so that ordinarily for infants under three months of age I use equal parts of water and milk, and I have often been most agreeably surprised to see how well they thrive on this dilution of the steamed milk. For older babies one part of water to three of milk will usually prove satisfactory. If it be desirable to substitute barley or oatmeal gruel that has been cooked for at least one hour and dextrinized by the addition of cereo or diastase, there can be no reasonable objection; but this requires careful preparation which is not likely to be universally observed. [Dr. White of Boston in recent experiments, found that dextrinized cereals did not give as small and soft curd as did the undextrinized.] It is best indicated in special cases for a short period after a serious attack of intestinal disturbance. The advantages claimed for this method of steaming the milk previously modified by dilution, according to special indications and the addition of soda salts and sugar are that the vessel used for the purpose is cheap and can easily be kept clean, that there is no risk of losing the milk from breakage, as when a heated glass bottle is set in a pot or crock, and that by directing the boiling of the water to be watched the time of exposure to heat can be nicely regulated, so that a temperature of 140° F. will not be exceeded. Moreover, the inner vessel containing the milk can at once be removed, and the milk rapidly cooled by immersing it in cold water, meanwhile stirring the milk. The milk can then be poured into the ordinary milk-bottle and kept upon the ice until required for use, when it is again warmed to 98° F. in the nursing bottle by immersing for five minutes in hot water.

My experience with the use of steamed milk for the past six years as a daily food for infants has been extensive and altogether quite satisfactory. I find that it agrees well with most babies and they thrive, which means that they are happy and playful, have firm tissues and gain weight. In some few instances, when the cases could not be closely watched, constipation has occurred, but either a larger dilution or the addition of a small amount of malt-extract, say one dram to the quart, has relieved the difficulty. The addition of cream was tried in some cases, but did not work satisfactorily. The percentage of fat in good cow's milk is ordinarily ample, especially in the "top-milk," and I have come to believe that it is better to dilute the milk freely than to depend upon an increase of fat. If the process of assimilation be uninterfered with by overfeeding, the importance of maintaining a proper percentage of fats to proteids and all other such quasi-scientific scruples may be easily set at rest.

In the country where clean milk can be obtained fresh from the cow, perhaps the steaming process might be dispensed with, and the views of some recent authorities realized. But it would prove dangerous to use such milk after it had stood for any length of time, especially in warm weather, on account of the animal heat inviting decomposition of the albumins and forming toxic ptomains. It is to prevent this that milk is cooled at once at the dairy, when it is to be kept or transported, and it is my opinion that after the milk had been once chilled the casein becomes more difficult for the human infant to digest.

The views here expressed have been intended to be practical rather than scientific. They may perhaps be regarded by many as heretical, considering the firm hold that the subject of percentage feeding has lately taken on the professional mind. But I will offer to assert that the homely fact that, when mother's milk cannot be secured, a good quality of cow's milk properly diluted and steamed is easily digested and causes the child to thrive, is as truly scientific as the theory of killing disease-producing germs conveyed by cow's milk to secure the thriving of the child, or that a facsimile of human milk may be obtained by any arrangement of the various elements of cow's milk, based on the percentage of fat or cream, which is the only element possible to estimate accurately in a ready manner outside of a chemist's laboratory, the remaining estimates being made by a mathematical calculation. While I believe in medical progress legitimately and intelligently pursued, I also have faith in conservatism. *"Festina lente"* is a good motto for the young practitioner. I do not consider that it adds to the dignity and honor of our noble profession to use science as a fad or plaything in order to exploit or display our college breeding, or to pose as a true lover of science before a credulously admiring public.

THE BACTERIAL PATHOLOGY, SYMPTOMATOLOGY, DIAGNOSIS, TREATMENT AND QUARANTINE OF TONSILLAR INFLAMMATIONS.

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THE subject which I present is one that is much misunderstood, a misunderstanding not confined to the "general practitioner," but common to the "specialist" as well. It is difficult for the older and many of the younger men in medicine to sever the long-wedded ideas regarding tonsillar inflammations and to realize that the physical disturbance and clinical manifestations cannot be relied upon in determining the etiological factor in these conditions. The following note received from a man of much clinical experience and hospital training fully demonstrates this point. A secondary culture was submitted in a case "for fear that there might have been some mistake in the first report," with the accompanying statement: "This case was never *clinically* a case of diphtheria. The patient never had a single symptom of diphtheria except a very slight dotted area on one tonsil which lasted but twelve hours." The cultures revealed the presence of virulent Klebs-Löffler bacilli. The patient died.

The inauguration of municipal health laboratories has been productive of results which have revolutionized the views pertaining to the pathology of tonsillar inflammations. The corroborative evidence is so strong that there can be no chance for mistake, and without a positive knowledge on the part of the attending physician many a tonsillar condition having a mild clinical disturbance has suddenly proven fatal, the usual cause assigned being "heart failure."

It has been amply demonstrated that a Klebs-Löffler infection is capable of wide variance and also that there are other micro-organisms which produce tonsillar inflammations, which, by their macroscopic appearance or clinical manifestations, cannot be differentiated from a Klebs-Löffler invasion or from one another.

Before taking up the discussion of these conditions I desire to call attention to the nomenclature in general use. The term "follicular tonsillitis" in the majority of instances is used to describe that inflammation of the tonsil in which the exudate, if any, is slight in amount and confined to the follicles. Such a term is misleading. A "tonsillitis" is an inflammation of the tonsil irrespective of its causal factor. A "follicular tonsillitis" merely emphasizes that the condition is localized as described. It has been amply demonstrated that such localization of inflammatory tonsillar processes can be either of a communicable or a non-communicable type. In view of this fact it would seem advisable that a nomenclature be adopted by which a more exact knowledge of the micro-organismal pathology be described, *e.g.*, in those conditions without such a causal factor affix the term "simplex." If the etiological factor be due to the Klebs-Löffler bacillus, affix "diphtheriticus;" if due to the streptococcus pyogenes, the Latin term-endings for that organism, etc. Such a nomenclature describing the micro-organismal pathology would be of the utmost assistance to the attending physician and the medical health officer.

The first disease to be discussed in accordance with such a nomenclature is *follicular tonsillitis simplex*, or that tonsillar inflammation which is confined to the follicles so far as any exudation is concerned, and is without known micro-organismal origin. The clinical picture in this ailment is sometimes severe. There is usually more or less swelling of the tonsil, with pain, particularly during "dry swallowing." The person has a rise in temperature, of great variance as to degree; not infrequently a severe bodily aching, sometimes of greater localization in the back and head. It is the consensus of opinion, I believe, that such a symptomatology cannot be considered diagnostic.

In other instances there may be little or no exudation, but very slight tonsillar disturbance, no rise in temperature, and constitutionally the person in the best of spirits. Such a symptomatology is not diagnostic. I have in mind an instance in which a young child, not having any greater clinical manifestations than described, died in six hours from a Klebs-Löffler toxemia which had been mistaken for this ailment by depending upon the symptomatology.

There is but one means for positive diagnosis in this disease and that is by cultural methods, which in this instance will reveal the presence of the staphylococcus pyogenes aureus and albus almost to the exclusion of any other organism. It may be that these organisms are among the causal factors in the production of the ailment, but such point has not been clearly demonstrated and, until it is, the disorder should be, in my opinion, classed as described.

The treatment of follicular tonsillitis simplex is simple and the prognosis is excellent—the internal administration of calomel, the induction of free perspiration, the use of simple formulæ, employing aconite, bryonia, belladonna, etc., the use of glycerin with chloride of iron on the tonsils, or spray of Dobell's solution; in a few days the patient will be well. The organisms found in this disease are the inhabitants of most mouths during perfectly normal conditions and are not productive of any communicable tonsillar affection. For this reason quarantine measures are unnecessary.

The second class of diseases to be considered are those inflammations of the tonsil which on cultural examination show the presence of the Klebs-Löffler bacillus. Such inflammations may be localized on any and all portions of the tonsillar anatomy, including the follicles. The symptomatology may range from the most mild disturbance to a severe illness. There may be either little or no change in the macroscopical appearances of the tonsils or there may be a dense and adhesive membrane.

There are two important factors which influence the severity of any infection: First, the resisting powers of the tissues attacked, and, second, the attacking power of the invading organism. The Klebs-Löffler bacillus is capable of a wide variance in its infecting power, the tonsils are likewise subject to a wide range in their susceptibility. A case having a slight tonsillar involvement may have a severe clinical disturbance and *vice versa.* The most virulent Klebs-Löffler bacillus does not always produce the most localized tissue destruction. The constitutional disturbance depends upon the strength and rapidity of production of the toxin and its absorption.

The finding of the Klebs-Löffler bacillus is of the greatest importance and should at all times be the keynote for activity. The patient should be quarantined and treatment inaugurated, for no one can decide when the conditions regulating infection will change. When the Klebs-Löffler bacillus is found, no matter whether the illness be severe or not, that patient should be considered as "diphtheritic" and at least a small dose of antitoxin administered, such as would represent the quantity necessary for immunization.

The treatment of a patient more severely ill has to be guided by the amount of clinical disturbance. Locally the application of Löffler's solution, 10 per cent. nitrate of silver, 10 per cent. protargol, if the membrane be dense, is of value. Cleansing sprays of Dobell's solution or of Seiler's tablets assist. The internal administration of cardiac stimulants should be employed as conditions demand. Antitoxin should be employed in each and every instance, the amount and frequency depending upon the exigencies in the case. I believe that the minimum dosage in most instances should not be less than 2,000 units, repeated at intervals of six, twelve or more hours as indicated by persistent constitutional depression or other evidence of toxemia. Do not depend on antitoxin as the only treatment to administer. It will not materially hasten a disappearance of the Klebs-Löffler bacillus although it not infrequently hastens an exfoliation of the membrane by increasing tissue vitality and not permitting further local destruction. Use local applications and internal stimulation.

The prognosis of tonsillar and pharyngeal diphtheria is excellent if the infection be recognized early and if the treatment outlined be closely followed. As to ill-effects from the use of antidiphtheritic antitoxin, I believe them to be *nil.* The only unpleasant sequel to its administration that I have seen is the occasional production of an urticaria, which has never been of long duration, disappearing in from forty-eight to seventy hours, sometimes earlier. I am not convinced that this urticaria is the result of any principle in horse-serum or the antitoxic substance, but think it is due to some contamination in administration. The time of the introduction of the antitoxin has a material effect as regards influencing the length of illness. Investigations carried on in the Department of Health of Buffalo have resulted as follows: When administered on the first day the average length of illness, covering a large number of recovered cases, was ten days; on the second day, twelve days; on the third day, fifteen days; on the fourth day, sixteen days, and on the fifth day, about twenty days.

In cases in which antitoxin was not administered and the persons recovered, the average number of days of illness was twenty-seven.

The average length of time that the Klebs-Löffler remains in the secretions from the previously affected after complete recovery has been found to be fourteen days. This last factor materially influences the question of quarantine. Many instances have occurred in the city of Buffalo where a direct transmission of diphtheritic infection has been traced to persons who were not detained until the infection had entirely disappeared, or else the infection, being mild, had not been recognized.

A sad experience resulting from the failure on the part of a physician to utilize cultural methods in determining the true nature of an illness occurred in the household of a prominent attorney whose little daughter barely escaped death. There came to visit in this household a little girl who gave a history of having had some two months previous a mild throat affection. Seven days after her arrival, the daughter of the attorney was taken ill with a most pronounced Klebs-Löffler tonsillar infection. Cultures from the throat secretions of the visitor revealed the presence of Klebs-Löffler bacilli capable of producing death in the medium-sized guinea-pig in from fifty to sixty hours. There is little doubt that the dipththeritic infection was introduced into this household by the visitor. Had a proper diagnosis been made and quarantine established in this mild case, such transmission would have been avoided.

The next class of diseases to be considered is inflammation of the tonsil in which bacteriological examination reveals the streptococcus pyogenes to the exclusion of other organisms.

In the early part of March, 1896, the first investigation was carried on in the Buffalo Health Department, relative to a membranous condition of the tonsil with a severe clinical disturbance which resulted fatally. Dr. Potter of Buffalo, submitted a culture and examination revealed the presence of short-chain streptococci almost to the exclusion of any other organism. Being reluctant to consider the illness other than diphtheria, he submitted more cultures, examination of which resulted as in the former instances. A small piece of membrane accompanied one of the swabs and examination revealed the presence of the streptococcus almost to the exclusion of any other organism. As the result of these findings, a diagnosis of a streptococcus tonsillar infection was made. On the seventh day of the disease the patient died, the result of a general toxemia. Diphtheria antitoxin had been administered on two different occasions in large doses without the slightest beneficial effect.

This being the first reported instance in Buffalo of death resulting from a streptococcus tonsillar infection, the facts in the case were submitted to Dr. Hermann M. Biggs, director of the New York Bacteriological Laboratories, requesting information as to whether similar instances had occurred in New York. Dr. Biggs replied that they had had several deaths from streptococcus toxemia, the tonsils being the seat of the primary invasion.

The following statement of Dr. Thomas Bagley, Buffalo, N. Y., contains an interesting account of a severe streptococcus tonsillar infection:

"February 11, 1900, I was called to attend a boy, ten years of age. His parents stated that he had not been feeling well for about a day, complaining particularly of a sore throat. On examination, I found both tonsils enlarged, the right having the ordinary appearance of a follicular tonsillitis, the left presenting in its central portion a very suspicious membranous patch. The temperature at this time was 104° F.; pulse, 160; the patient was somewhat delirious and extremely nervous. On the second day the general condition was worse, the temperature being 105° F.; pulse, 170.

"The right tonsil still retained the appearance of a follicular tonsillitis, but the left tonsil was completely covered with a dark grayish membrane, resembling that usually seen in a severe case of tonsillar diphtheria. Becoming alarmed at the condition, 2,000 units of diphtheritic antitoxin serum were injected, and a culture sent to the Department of Health for confirmation of diagnosis. On the following day a report was received that the culture did not reveal anything typical of diphtheria, but requested that a second culture be submitted. In the meantime, the membranous patch had extended to the pharynx, into the posterior nasal passages, entirely covered the soft palate, and seemed inclined to extend forward. The right tonsil was completely covered with a membrane.

"The case clinically resembled diphtheria. A second culture was submitted and, at this time, I was successful in obtaining a portion of the membrane, which was likewise delivered to the bacteriological laboratory. The patient's condition was rapidly becoming more serious. The following morning a report was received that there were no diphtheria bacilli in the culture. Examination of the membrane revealed streptococci to be present almost to the exclusion of other organisms.

"On the fifth day of the disease, the temperature ranged from 103.5 to 105° F.; pulse, 120 to 170. There was no change in the appearance of the throat. Local treatment had included the use of strong solutions of the subsulphate of iron, a mixture of carbolic acid and glycerin, several applications of Löffler's solution, and continual use of peroxide of hydrogen. As the patient's condition was such that death seemed inevitable, and owing to the fact that streptococci predominated in the membrane, on the eighth day of the disease, as a last resort, 10 cc. of antistreptococcus serum were injected. To my surprise, the boy's condition began to improve. The membrane commenced to exfoliate, and three days later the uvula and left tonsil were entirely cleared of membrane. In a few days, the throat assumed a healthy appearance. The patient has made a good recovery."

May 29, 1901, the following experience occurred in the city of Buffalo. A culture was submitted by Dr. Bentz in the case of Miss McM—— and examination revealed the streptococcus to be the predominating organism. The clinical disturbance was most severe and the attending physician considered it a typical Klebs-Löffler infection.

During an interval of three days 9,000 units of diphtheritic anti-toxin were administered without the slightest beneficial effect. On the third day the patient died of streptococcus toxemia. Had antistreptococcus serum been administered, it might have proven beneficial, as it had been demonstrated to be a streptococcus and not a Klebs-Löffler infection.

During the past year, an instance occurred in the practice of Dr. Carlton R. Jewett of Buffalo which demonstrates the possibility of transmission in streptococcus infections. Dr. Jewett submitted a culture from Mrs. H., who complained of sore throat for about ten hours, and who at the time had a ten-month-old nursing baby. At the first call of the physician, the child was taken from its mother and not allowed again to enter the room. Examination of cultures revealed the existence of a streptococcus infection. Curettings made from the tonsils fully corroborated this view. The mother, after several days of energetic treatment, began to improve. Three days following the positive diagnosis of the ailment, the child was afflicted with an erysipelatous condition of the face, beginning in the region of the mouth and gradually extending until the chest and abdomen were entirely involved. Two or three days later the child died of a streptococcus peritonitis. The mother made a good recovery. There seems little doubt that the child received its infection either direct from the throat lesion of the mother or through the lacteal secretions.

The treatment of streptococcus infections from the local standpoint is the same as that of diphtheria. Constitutionally the administration of diphtheritic antitoxin accomplishes little or no good. Instances of improvement like that related in Dr. Bagley's case would lead one to believe that in *known* streptococcus infections, the antistreptococcus serum is of value. Other constitutional treatments should be merely along stimulative lines.

As regards quarantine, I am of the belief that such infections should receive some quarantine measures.

The next class of diseases to be considered are those inflammations of the tonsil produced by the micrococcus of sputum septicemia. Dr. Carlton R. Jewett submitted a culture from the throat of Miss B. The patient was extremely ill, suffering from a condition considered by the attending physician and others to be tonsillar Klebs-Löffler infection. Examination of the culture did not reveal the presence of Klebs-Löffler bacillus. Reluctant to believe the condition to be other than diphtheria, Dr. Jewett requested the bacteriologist to visit the case in person. On the following day, under the direction of Dr. Jewett, I made several cultural inoculations and also succeeded in obtaining a small portion of the membranous exudate, which, at this time, covered the greater portion of both tonsils and portions of the uvula and nasopharynx. Examination of the cultures resulted as in the former instance. Examination of the membrane revealed the micrococcus of sputum septicemia in abundance.

The patient died about the tenth day of the disease. Drs. C. G. Stockton, H. R. Hopkins and Roswell Park had been called in consultation and were unanimous in the statement that as regards the macroscopic appearance of the tonsils and the clinical symptoms, the illness could not be distinguished from a case of severe diphtheria. Diphtheritic antitoxin of a reliable make had been administered at the onset of the disease without the slightest improvement. There is no question that this patient died from a toxemia due to the micrococcus of sputum septicemia, the primary lesions being confined to the tonsils, uvula and nasopharynx.

The principal treatment of sputum septicemic infections is the same as that occasioned by the streptococcus pyogenes, except that no antitoxic substance has as yet been discovered.

As regards quarantine, the organism is the common inhabitant of the human mouth, and but rarely infects. I do not think it requires such measures.

As regards tonsillar infections produced by the oidium albicans, many instances in which physicians have regarded the diagnosis as a Klebs-Löffler infection and the cultures revealed an abundance of the commonly termed "thrush" organism have occurred in the experience of Buffalo's laboratory. The membrane in these patients has been noted as being present on the tonsils and uvula, and in one instance a cast of the upper portion of the esophagus was submitted for inspection, the same having been mistaken for a cast of the bronchial tube. This condition is combated by the local application of stimulative alkaline washes and a general tonic treatment The prognosis is excellent. As regards quarantine, it does not seem to require such measure. In rheumatic anginas, fifty-two cases of suppurative tonsillitis or "quinsy" have thus far been investigated by cultural methods and the predominating organism found present was the staphylococcus pyogenes aureus. It seems most probable that this organism plays no other part in the etiology of the ailment than being the cause of the pus production. In three instances an organism corresponding to the colon bacillus was found in the abscess contents. As regards syphilitic tonsillar lesions, inflammation due the presence of irritants, etc., there is nothing to-day of any relative importance bearing on their bacterial pathology and such conditions are not considered in this paper.

In the disinfection of premises after the existence of contagious maladies the following has been found to be satisfactory.[1]

There has recently been placed upon the market a candle consisting of paraformaldehyde which can be applied in the same manner as are those composed of sulphur. This candle consists of paraformaldehyde incorporated with a small proportion of paraffin and pressed in cylindrical form, the cylinders being of two different sizes. To utilize the candle, it is supplied in a tin container or burner to which a limited amount of oxygen has access during operation so as to support combustion only at the bottom of the candle, and by burning in this manner the heat produced causes the solid paraformaldehyde to revert to the gaseous formaldehyde.

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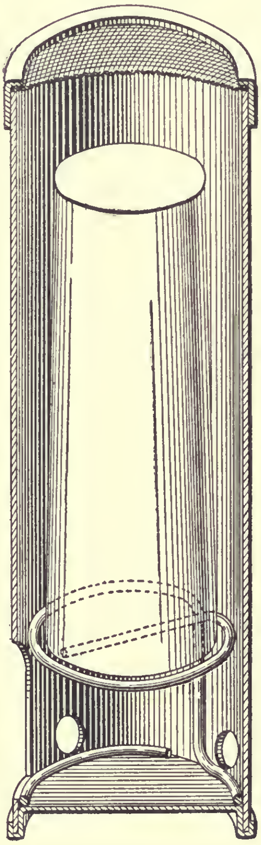
[1] Since this article was presented the manufacturers of the candles have changed and the new firm has substituted an asbestos container which in my experience does not prove as efficient as the old tin container.

Paraform burns freely and the flame would extend over the entire surface if some container limiting the supply of oxygen during combustion were not employed. If the entire surface of the candle were allowed to burn, the gas would be converted into carbon dioxide and water by the flame and rendered inert for disinfecting purposes.



The smaller-sized candle contains, approximately, 350 grains of paraformaldehyde, and according to tests carried on in the Bureau of Bacteriology, Department of Health, Buffalo, N. Y., this candle when properly ignited, generates sufficient gas for the surface disinfection of a room not exceeding 300 cubic feet capacity, and by increasing the number of candles in the proportion of one to every additional 300 cubic feet of air space, this method can be relied upon for surface disinfection (the limitations of which are explained later) in rooms not exceeding 3,000 cubic feet capacity. With this, as with all other formaldehyde methods, if the room capacity greatly exceed this amount, even though an additional number of candles in the same ratio is applied, it is impossible to obtain by sufficient rapid diffusion the necessary concentration of the gas to insure constant results.

The best results in the use of this paraformaldehyde candle method of room disinfection are produced in the following manner: (1) The room made as nearly air-tight as possible; (2) the use of one small candle to each 300 cubic feet of air space, and not depending upon this means of surface disinfection in the apartments containing more than 3,000 cubic feet; (3) the surfaces of the articles to be disinfected to be so arranged us to allow free exposure to the gas; (4) the room to remain for from six to twelve hours; (5) *a cleansing process to supplement the procedure.*

Certain facts are to be particularly remembered in the application of this gas in household disinfection. While diffusing with great readiness, it possesses but slight penetrating properties.

These facts demonstrate that thoroughly to disinfect a room and its contents, we should not depend solely upon formaldehyde, but that in rooms having glazed surfaces, china, marble, metal, and the like, subsequent washing with solutions possessing recognized germicidal properties, as 5-per-cent. solution of formalin, 5-per-cent. carbolic acid, etc., should be employed. Thus, it is shown that while in formaldehyde gas we now have an efficient and harmless disinfectant for such objects as laces, plush, velvet, curtains, table-covers, hangings, and the like, when not of too heavy texture for which heretofore no satisfactory household method of disinfection had been devised, and while in many cases its action upon all objects may be efficient and satisfactory, and its action upon metals, picture frames, etc., harmless and non-corrosive, in cases of serious infection, in which it is possible that infectious matter, such as blood, saliva, sputum, feces, pus or urine may be dried upon wood floors, chamber-vessels, basins, washstands, glasses, metal bedsteads and other hard surfaces, its action should be supplemented by a cleansing and disinfecting solution possessing solvent and penetrating powers.

The writer desires to express his gratitude to Dr. DeLancy Rochester for many valuable suggestions pertaining to the treatment of tonsillar conditions.

Dr. J. C. White Leaves Harvard Medical School.—Dr. James Clarke White, who has been connected with the Harvard medical school longer than any other man, delivered his last lecture before Harvard students last week, and as a souvenir of the occasion he gave each man a copy of his well-known book, "Dermatitis Venenata." He has been an instructor and professor in the Harvard medical school since 1858.

THE DIAGNOSTIC USES OF THE GONOCOCCUS.

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THE *micrococcus gonorrhœæ*, or "gonococcus," as it is usually termed, was discovered by Neisser in 1879, in the purulent discharges of gonorrheal urethritis and conjunctivitis. It was subsequently successfully grown in culture by Bockhardt and Bumm, and its biological characters and causal relation to gonorrhea were worked out by these and other investigators. The organism is a large, non-motile, hemispherical or coffee-bean-shaped coccus, which, since it multiplies by simple fission in two planes alternately, occurs in pairs or fours, the sides toward one another being flattened or faceted and always separated by a narrow interval. This separation is due to the presence of a usually invisible capsule. The gonococcus is constantly present in the pus of acute gonorrheal urethritis, cystitis, endometritis, salpingitis and gonorrheal ophthalmia; but in the discharges from chronic forms of these disorders it is less frequently demonstrable. It also occurs upon the heart valves in the malignant form of gonorrheal endocarditis; it has been found in the joints in specific arthritis and in the affected tissues in parametritis; and has been demonstrated in the blood. It grows most readily upon mucous surfaces and is thought to flourish more luxuriantly in columnar than in stratified epithelium. In any mucous surface it burrows deeply among and into the cells, and may there maintain irritation and serve as a nidus for reinfection long after all acute discharge has ceased.

Some of the complications and sequelæ of gonorrheal infection are, it should be here remembered, due to other pathogenic organisms, the staphylococcus pyogenes aureus being most often at fault. The gonococcus does not, so far as known, grow outside of the human body, save in careful artificial culture. Upon exposure to light, air and ordinary temperatures the germs quickly die, infected materials thus soon losing their virulence. Kratter claims, however, to have demonstrated the presence of living gonococci on clothing which had been soiled some months previous by a gonorrheal discharge, and the disease is recently alleged to have been communicated to the dog. The micrococcus gonorrhœæ is readily stained by dilute solutions of any of the basic anilin dyes, and is easily demonstrated in the discharges of most cases of *acute* gonorrhea by any one possessing an elementary knowledge of bacteriological technic. Let us now briefly consider the question of the real value of such examination in the diagnosis of gonorrheal infection.

It has been claimed and taught that the morphological characters of the gonococcus, plus its occurrence in and upon the pus cells, give sufficient ground for its recognition, and that all that is necessary is to stain the suspected material with some anilin color, dry, mount and examine; if faceted cocci lying in pairs within the pus cells be found, they are gonococci; if such cocci be absent, the case is not one of gonorrhea. Now, while this may be true of most cases of acute gonorrhea of the male urethra, it is entirely insufficient for the absolute recognition of the disease even here, and especially untrustworthy and disappointing in chronic, in atypical, and in "suspected" cases of gonorrheal infection, in particular those occurring in other situations than in the male urethra—in the very cases in which the aid of laboratory diagnosis is most desired. There are other cocci which, when they multiply rapidly, show faceting of the sides in contact, thus very closely imitating the gonococcus; and cocci morphologically indentical with the gonococcus are found lying in and upon the pus cells in urethral and other discharges. Furthermore, the gonococcus is not always found within the pus cells, but is frequently met with floating free in the liquid portion of the discharge. Of course, when the gonococci are to be studied in tissues, blood, heart valve vegetations, etc., this seeming predilection for the pus-cell body is of necessity useless. The fact that the gonococcus does not stain by the Gram method is of more value in differential diagnosis than are its morphological features and location, but this also is not conclusive, since organisms are discovered which resemble gonococci in appearance, and fail to stain after Gram, but which are evidently *not* gonococci. In fact, we must acknowledge that the only indubitable bacteriological proof is obtained by growing the organism in culture. Its cultural peculiarities, together with its morphology, distribution and tinctorial reactions, will give the only trustworthy basis for an opinion in obscure cases. The growing of the gonococcus in culture is, however, by no means a simple procedure. It can be successfully carried out only by those possessed of a good knowledge of bacteriological laboratory methods and the requisite apparatus, facts which render the culture method unavailable in many instances. The alternative is then offered of utilizing the simpler method, of staining the suspected material and studying it with the microscope, or of depending upon other than bacteriological examination for diagnosis. And, with all of their theoretical uncertainties, the staining methods when properly carried out are of indisputable value and doubtless as reliable as are most of our available diagnostic measures. The results of such a carefully conducted examination are probably 95 per cent. correct, and the practical man should be satisfied with this percentage of accuracy, rather than expend an undue amount of work and worry in striving for unattainable perfection. Simply bear in mind the possibility that any opinion as to presence or absence of gonococci which is based upon miscroscopical examination alone may be wrong.

The following method of procedure, carefully carried out, will yield all the information which can be gotten from microscopical studies: Procure the pus or other suspected substance in as fresh a state as possible and as free as may be from dirt, dust, or other secretions, and immediately make a number of neat "slide-spreads." This is best done at the patient's bedside, or at the office when the patient presents himself for examination. The material is readily spread into a thin film by means of a splinter of wood, a bit of tissue paper, or, preferably, the edge of another slide. It is absolutely necessary that a *thin, even film* be secured; the spreading of this film being in fact the most important step in making the examination. Unless a *thin* spread is obtained, subsequent manipulation is apt to prove a waste of time, as no trustworthy staining process can be carried through. Also, unnecessary roughness and violence in making these films should be scrupulously avoided, to the end that the leucocytes and epithelial cells be not crushed and distorted, a result which would seriously interfere with the subsequent determination of the location of gonococci possibly present upon or in the cells. After a sufficient number—three to six—of satisfactory slide-spreads are procured, they should be allowed to dry thoroughly in the air, without heat, and may then be kept for hours or days, until a convenient time for completing the examination presents itself; or they may be sent through the mail to a laboratory for examination.

The next step is the "fixing" of the film by heating the slides in an oven or over an alcohol flame to a temperature sufficient to coagulate the albuminous constituents, but not enough to char or scorch—about 175° F. is to be preferred. One slide is then stained for five minutes in Loeffler's alkaline methylene (methylene blue 1 gm.; solution of KOH in distilled water, 1 in 10,000, 100 c.c.). The stain is poured off, the slide washed in clean water until no more blue color comes away, and then dried in air, without artificial heat. By this method the nuclei of the pus and other cells are stained a clear blue, as are *all* micro-organisms present in the specimen.

A second slide is now stained after the Gram process, as follows: Place in a test-tube 10 drops of pure anilin ("anilin oil"); add ½ ounce of distilled water, shake violently for a half minute and run the resulting milky or opalescent fluid through a wet filter into a watch-glass. To this filtered "anilin water" add a saturated alcoholic solution of gentian violet until a metallic luster appears as a film upon the surface of the mixture (about 10 per cent. of gentian violet solution is required). With this "anilin water-gentian violet" stain the film on the slide for three minutes; pour off surplus stain and rinse the slide momentarily in clean water. Then flood the slide with a dilute Lugol's solution of iodine (Lugol's solution and distilled water, equal parts). The film quickly becomes brownish black and opaque. After one minute pour off the iodine solution, rinse in water and then pour alcohol over the slide. The film now changes to a blue, and this color is rapidly discharged by the alcohol, which latter should be repeatedly poured over the slide until no more color comes away—about three minutes usually. The film should now be almost colorless; it is dried in air and is then ready for examination. Those organisms which take the Gram stain are seen to be a deep violet color, almost black; many of the cell nuclei retain a *faint* violet stain. The common pus cocci, many other cocci and pathogenic micro-organisms take this stain; *the gonococcus does not* and should be invisible in preparations stained by this method.

Stain a third slide after the Gram method, as just described. After decolorization in alcohol counterstain the film with a dilute solution of saffranin (aqueous). Rinse in clean water, and allow the slide to dry in air. All organisms, the gonococcus included, not colored by the Gram stain will be found stained a distinct saffranin pink. When especially thorough search for gonococci is to be made it is well to have several slides stained by each of the three methods just outlined.

The staining of the slides being completed, careful and painstaking examination of each of them should be made with the microscope and a $^1/_{12}$ homogeneous immersion lens. The use of a cover-glass is unnecessary; simply place the drop of immersion fluid upon the thoroughly dry uncovered film. A good lens, proper illumination, patience, time and a knowledge of the morphological and other peculiarities of the gonococcus will make possible the recognition of the organism in almost all cases in which it may be present. Many slides and an hour or two of patient search may, however, be necessary before one can safely venture a negative opinion.

In the methylene-blue preparations all micro-organisms are found to be stained blue. Look for coffee-bean shaped diplococci and note carefully whether they lie upon and in the bodies of the pus cells, or whether they lie free between the cells. Note the possible grouping of the cocci in twos or fours; and the existence of larger groups of cocci. If no organisms answering to the description of the gonococcus be found after prolonged search through several methylene-blue preparations, it is unlikely that the gonococcus is present. If gonococcus-like organisms be seen, examine the Gram-stained slides and note whether these organisms have taken the Gram stain; if they have, they are *not gonococci,* however much they may resemble this organism in shape, grouping, relation to pus cells, etc. If, on the contrary, these faceted cocci have not been tinged in the Gram preparations, one can be almost sure that they are gonococci. Examine now the double-stained (Gram and saffranin) preparations. These two stains together color all organisms present, and in well-made slides it should be easy to differentiate Gram-stained cocci from those which do not stain after this method, but take up the saffranin color. The common pus-producing staphylococci and streptococci, the diplococcus pneumoniæ and some other pathogenic organisms with which the gonococcus might possibly be confounded are seen stained a deep violet color. The *gonococcus,* if present, is stained by the *saffranin.*

In cases of acute gonorrhea of the male urethra there should be no difficulty in demonstrating the specific organism in any and every slide; other micro-organisms will be few in number or entirely absent. In cases of longer standing the gonococci should be found, but they will be much less numerous and associated with many pus cocci and other bacterial growths. In chronic gleety and other discharges which have been actively treated the recognition of the gonococcus is difficult, owing to the small number of gonococci and the large number of complicating pathogenic organisms present in the secretion; and because of the important fact that the germicidal injections employed have, while not entirely destroying the gonococcus, caused it to grow and multiply slowly and in an atypic way, giving rise to involution forms which may be unrecognizable as gonococci by staining methods, although, if uninterfered with for a time, able to develop into typical and virulent gonococci.

In these cases cultural methods give much the more valuable results and should be resorted to in all cases of importance, when the necessary apparatus and technical skill are possessed. The culture diagnosis is the only absolute dependence in medico-legal cases. The following, after Wertheim, is a comparatively simple method of applying the culture test: A minute portion of the suspected discharge is thoroughly mixed with sterile, liquid blood serum in a culture tube, at a temperature of 40° C. Two dilutions are now made from this first inoculated tube and to the liquid serum contained in each of the three tubes an equal part of melted, sterile, 2-per-cent. agar-agar at 40° C. is added. The contents of each tube are then poured into a sterile flask or Petri dish and placed in the incubator at 37° C. Within twenty-four hours, usually, minute colonies will make their appearance in one or more of the dishes, the gonococcus colonies being colorless and semi-transparent, with irregularly scalloped edges. These young colonies should immediately be transplanted to slant tubes of sterile chest serum-pepton-agar, upon which, after a few days in the incubator at 37° C., characteristic colonies develop. Microscopic examination after staining with Loeffler's blue and by the Gram process will complete the identification of the true gonococcus colonies.

Slant tubes of nutrient agar upon the surface of which sterile blood-serum has been smeared may be directly inoculated with suspected material, a good growth of gonococci being sometimes obtained. The danger that the colonies will be overgrown by other organisms is, however, much greater than when the dilution method just described is employed. Heiman's medium is also much used. It consists of pleuritic fluid or fluid from a hydrocele, fractionally sterilized, to which has been added 2 per cent. of the following mixture: Agar-agar, glucose, and peptone, each 2 parts; sodium chloride, ½ part. Slant tube cultures of gonococci are readily grown upon this medium. The addition of a little *acid urine* to any of the ordinary nutrient agar media is found to make possible the growth of the gonococcus upon them. A cultural characteristic of the gonococcus is its comparatively ready growth upon the special media just mentioned, and its absolute refusal to grow upon the nutrient culture materials commonly used in laboratories for the study of bacterial growths.

The culture test, when carefully carried out, is much more accurate and more delicate than the most skilfully-conducted microscopic examination, often revealing the presence of gonococci when prolonged search with the microscope in stained preparations had given only a negative result. By cultural means gonococci have been detected in the blood, in joint effusions, in salpingitic pus, on the heart valves, and in old gleety discharges which were seemingly free from gonococci.

The adequate bacteriological diagnosis of gonorrhea is thus seen to consist in more than the simple microscopical examination of anilin-stained films. Although time consuming and calling for some skill, the cultural examination for gonococci in important doubtful cases will amply repay the physician for all trouble expended, and the slide-spread staining methods is not to be lightly regarded, since it frequently shows the nature of an acute urethral or other infection more quickly and accurately than any other diagnostic means at command. No physician should treat urethral inflammations without making, or having made, an examination of the discharge to determine the possible existence of specific infection, and no case of gonorrheal urethritis should be discharged as cured until all suspicious cocci have entirely disappeared from the discharge. In cases in which it is of great importance to be sure that a *cure* has been obtained, as when marriage is contemplated, a culture had best be made.

105 St. Joseph Street.

POISONING BY ACONITE (THE CONDON CASE) AND THE PHYSIOLOGICAL ANALYSES OF ALKALOIDS.[1]

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THE subject for consideration involves an attempted poisoning with one of the most active of all known alkaloids—aconitine.

The story of the case, related by the prosecution, runs as follows: In April, 1897, at Springfield, Mass., Mrs. Condon, the defendant, was actively interested in stock speculation and found herself greatly embarrassed by the Dean Company's failure, occurring at that time. Among her creditors, mostly women friends, a Mrs. Hunt was very insistent upon repayment of a few hundred dollars. She called upon Mrs. Condon for the money on a Monday, and, as a consequence of her insistence, was promised full payment on the following Friday evening. The day after this call, Tuesday—as shown by the prosecution—Mrs. Condon accompanied a cousin, a self-styled "Doctor," to a local drug store, where he bought at her request and immediately gave to her a two-ounce bottle full of tincture of aconite.

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[1] Résumé of a paper read before the Medico-Legal Society, New York, Nov., 1901.

Friday afternoon the defendant purchased from a near-by liquor dealer a pint of port wine and with this she filled a small flask which was sent to Mrs. Hunt that evening instead of the promised money. In this wine was a more than fatal dose of aconitine. As a cover to the crime, a similar portion of this port wine was sent by the defendant to another friend, but this portion contained no poison.

The poisoned wine reached its intended victim so late in the evening, as the woman was about to retire, that the gift was merely tasted and placed upon a shelf. Saturday morning upon awakening, she felt quite badly and, remembering the wine, went for it and at once drank one half of its remaining contents. Continuing to feel ill, Mrs. Hunt lay down and soon became strangely worse. She felt very cold and numb, dizzy, unable to move, feeling throughout the muscles of her limbs a peculiar creeping sensation. Her vision became obscure and, overcome by a general feeling of despair and alarm, the victim, who all this time had been alone in her apartment, struggled to the door and called for help. Assistance came none too soon. A woman answering the call found her already fallen upon the floor and powerless. A physician was immediately called and responded most promptly. To him, Dr. Rice of Springfield, is due the entire credit of saving the woman's life. After three hours of untiring effort on his part, Mrs. Hunt was out of danger and slowly recovering.

The evening of that same day, what remained of the poisoned wine and other samples were delivered by the Chief of Police to Prof. E. P. Harris of Amherst College, at whose request the writer was sent for and upon his arrival at Amherst associated with him for the toxicological work.

The chemical examination of the suspected liquid was pushed to its utmost and by specially devised analytical methods an alkaloid poison which proved to be aconitine was identified; it was also found that the wine sent to the other friend contained no poison.

Minutely detailed notes of the entire work have been kept and may be consulted by those interested in such ultimate analyses of alkaloids, but they are too extensive for reproduction here.

Our chemical methods of qualitative analysis conclusively proved that the port wine of the small flask contained aconitine, but the quantity of the dose remained a most important problem. It is firmly established in the minds of the investigators that no evidence of criminal poisoning can be conclusive unless the poison be *absolutely* identified and its *quantity* determined.

They are fully aware that no testimony as to the determination of the amount of alkaloid poison used in a criminal case has been offered in which the toxicity of the alkaloid is sufficient to provoke death in a total absorption of some milligrams. The reasons for this are obvious; for the total weight to be determined in such a case approaches too closely the limits of error of chemical balances, thus invalidating gravimetric methods of quantitative analysis; the only ones heretofore in use.

However, having succeeded in identifying an alkaloid, which chemists in general confess their inability to do, it is proposed to determine its quantity by original methods of great precision, the results of which shall be unquestioned.

Such methods in toxicology we propose to designate as physiological analyses, in illustration of which are offered the details of animal experiments in the Condon case, with the least possible preliminary to render their comprehension easy.

It has been for years the claim of some chemists that aconitine possessed no sufficiently characteristic chemical reactions to allow its qualitative determination and was so active a poison and used in so minute quantities that any quantitative analysis would be impossible.

That aconitine is easily and absolutely identified by qualitative chemical analysis has been amply demonstrated by the chemical part of our work. That this same poison, however minute its dose, can be quantitatively estimated by methods proven accurate to a variance of $^{6}/_{1000}$ of a milligram is the result of a series of experiments on the estimation of this poison by the graphic method applied to the observations of its effect on animals.

By such experiments, the means of detecting and accurately estimating minute quantities of poisons, and at the same time determining the most important factor of all in a case of criminal poisoning—the toxicity, are for the first time made public and have now established their legal admissibility and precedent (Commonwealth of Massachusetts, Western District, Superior Court, 1898, October, sitting *in re* Commonwealth *vs.* Condon).

In devising this system of physiological analyses, the author wishes to acknowledge his indebtedness to the previous experimental work with animals of his former teacher, Dr. Laborde, Director of the Laboratories of Physiology of the Medical Department of the University of Paris, and to the physiological studies of the toxicity of animal bloods and tissues made by his master and teacher, Charles Richet, Professor of Physiology in the University of Paris.

Aside from the suggestion made by Dr. Laborde of the use of the graphic curves for the identification of the poison, there seems to be no record of any attempt at a quantitative physiological analysis in toxicology; therefore, the following experiments and their results constitute the pioneer steps of a method that would seem destined to become very important in all cases of criminal poisoning that involve small doses or require careful differentiation.

Aconitine: Chemical, Clinical and Toxic Properties.—The alkaloid aconitine is the most violent of the vegetable poisons. Its chemical formula has been a subject of considerable discussion, but the study of the hydrolysis of aconitine leads to the conclusion that it is mono-benzoyl aconine—$C_{26}H_{40}(C_6H_5CO)NO_{11}$.

In order to substantiate this inference, experiments have been made with a view to reversing the hydrolysis and reconverting aconine into aconitine. Since aconine is a comparatively strong base, it should be able to decompose ethyl benzoate and form aconitine, or anhydro-aconitine if the temperature be high. An alcoholic solution of aconine, heated in a closed tube for three hours at 130° C. with a slight excess of the alkyl salt, was then examined. After the removal of the unaltered ethyl benzoate, etc., a base was isolated with ether, the crystalline hydrobromide of which corresponded with the same salt of anhydro-aconitine, identical with that obtained by the dehydration of aconitine.

In view of these reactions there can be little doubt of the correctness of the chemical formula $C_{33}H_{45}NO_{12}$ for aconitine.

When pure this alkaloid crystallizes in tabular crystals of the rhombic system. The crystals are soluble in 750 parts of water, 64 parts of ether, 37 parts of absolute alcohol, and 5.5 parts of benzene or chloroform.

Two crystalline auro-chlorides are easily obtained and afford a satisfactory means of identifying the alkaloid, which may be recovered from them in a pure state.

One auro-chloride ($C_{33}H_{45}NO_{12}HAuCl_4$) melts at 135.5° C. The other, with a formula $C_{33}H_{45}NO_{12}AuCl_3$, melts at 129° C.

There are two isomeric varieties of aconitine which may be distinguished as *A* and *B*. Both are obtainable in crystals of the same form and size and have the same chemical formula, but *A* aconitine melts between 182° and 184° C., and has a toxicity only one-sixth of that of the *B* aconitine, which melts at 188.5° C. (This great difference in the toxicity of the isomers is a striking example of how much more the vitality of cells is affected by the form than by the composition of matter—a fact not sufficiently recognized by all toxicologists).

The presence of a small trace of pseudo-aconitine makes it a very difficult matter to obtain the real aconitine in crystalline form, for it then has a strong tendency to be amorphous.

The most soluble salt is the nitrate of aconitine and that is the usual salt of commerce, for aconitine is a weak base. Its taste is slightly bitter, but very biting, irritating the mucous membrane of the nose and throat oftentimes to a degree to provoke sneezing. Its contact with the tongue is said to cause a characteristic tingling, numbing sensation, but several trials by the author and other chemists have utterly failed to give any such feeling. Duquesnel and Laborde report that this characteristic varies with the different kinds of aconitine, and in view of the combined negation of the constancy of this action it is evident that this particular sensation should not be looked upon as a characteristic of aconitine.

If an overdose of aconitine has been taken, the pricking and burning sensation extends from the tongue to the back of the throat, and is almost immediately followed by salivation, nausea, vomiting, dizziness, cardiac disturbances and syncope. There will be noticed a dilatation of the pupils with troubled or loss of sight, fibrillary muscular contractions, itching and creeping sensation of the skin about the face and extremities, which then become benumbed and paralyzed. The head, lips, and limbs seem to the patient to be of an excessive size. The pulse is irregular, a strong diarrhea commences. There are clonic spasms, cold sweats. The body temperature falls. The voice fails. The breathing is more and more stertorous, and death follows without great delay.

The intelligence, aside from a condition of syncope, remains intact to the last. That recovery is sometimes possible is proven by a case reported by Chaudeleux and by the recovery of the victim of the attempt to poison herewith reported.

The physiological studies of Liegeois, Guilleaud, Laborde and others show that aconitine is a poison of the central nervous system, which it stimulates first to paralyze later. It likewise paralyzes the peripheric nervous system (sensory, motor and secretory nerves—see experiments) and finally attacks the sympathetic system, the muscles, the heart and the respiration through the bulbus. Laborde insists upon the effects of the poison on the heart, which is accelerated, becomes irregular and finishes in tetanization, an effect of the intermediation of the bulbospinal system.

Postmortem.—The autopsy on a victim of aconite-poisoning reveals an intense congestion of liver, kidney and spleen, hyperemia of the mucous membrane of the mouth, esophagus and stomach, the blood thick, of a dark wine color or black, the heart in diastole and engorged with blood. The poison will be found chiefly localized in the contents of the stomach, the intestines, kidneys, urine and blood.

Animals are very sensitive to the action of aconitine, one milligram of which will kill a dog, one-fifth of a milligram a rabbit, and one-tenth of a milligram a frog. The pigeon is perhaps the most delicate means of studying the action and determining the amount of this poison, but in all cases of physiological analysis, the greater the number and variety of the animals used for the experiments, the more precise and exact will be the results of the work.

In the human being aconitine is the most poisonous of all known alkaloids, producing effects of a very decided nature in a dose of only one-tenth of a milligram. One milligram produces most severe symptoms of intoxication and three milligrams could be fatal. Cases of death resulting from aconite poisoning are not rare, but most of them were caused by suicidal intent or a mistake in the taking of medicine.

In the annals of crime, aside from the well-known "Lamson case" in England, little use of aconitine by poisoners is found. The few cases reported upon since that time are given full discussion, with reports *in extenso* of the case of Commonwealth *vs.* Condon, in which the poison and its amount are for the first time in toxicology positively determined.

The system of physiological analysis for the identification of alkaloids and the exact estimation of minute quantities, as well as the determination of relative toxicities, is based upon the idea of intravenous injection of a determined volume or weight of the suspected substance in a series of animals. The resulting symptoms, pulse-beat, blood-pressure, convulsions, paralyses, respiration, etc., are then carefully tabulated by the graphic method.

Having identified chemically or clinically the alkaloid, a standard solution of the same is prepared with perfectly pure water (or artificial serum). Of this solution, varying but always known, quantities are injected intravenously or otherwise introduced into animals, as nearly identical physiologically as possible with those of the series experimented on with the suspected material. The resulting symptoms are then tabulated graphically, until for each animal a curve is found which most exactly corresponds to the curve previously obtained from the similar animals injected with the suspected substance.

When the curves correspond, that obtained with a known amount of the standard solution of the alkaloid salt gives us the exact dose of poison and thus determines the quantity in the suspected substance.

To test the accuracy of this physiological analysis, after determining by its aid the amount of aconitine contained in the wine, a large, accurately-weighed portion of chemically-pure nitrate of aconitine was made up in a dilute solution, the exact titration of which was known only to the chemist, Prof. E. P. Harris. By purely physiological analyses, the titration of this solution was then determined by the writer, using only six cubic centimeters of the solution. The quantity reported by him *as found* in no case varied by more than $^6/_{1000}$ of a milligram from the quantity *used* by the chemist.

By reference to the reports of the experiments it will be seen that the quantity of the aconitine requisite to duplicate the symptoms produced by the alkaloid contained in the poisoned wine is to be found in a solution of which each cubic centimeter contains one-tenth of a milligram of aconitine.

By careful measurement of the contents of the flask delivered to us and from the evidence of the amount it contained before the woman drank from it, it was determined that she took into her stomach at that time a minimum of thirty-four cubic centimeters of the wine, of which each cubic centimeter contained one-tenth of a milligram of aconitine. The woman consequently swallowed the equivalent of three and four-tenths milligrams of the pure alkaloid aconitine, three milligrams of which might constitute a fatal dose. More than this she took into her system and her survival is to be attributed only to the remarkably efficient and prompt assistance rendered by her physician.

Mrs. Condon was tried at the October session of the Superior Court (Hampden District) of Massachusetts. After the prosecution had closed its case, the nervous collapse of the defendant occurred and her condition of health has ever since remained so precarious as to exclude all possibility of retrial.

In concluding the relation of our work on this case, aside from introducing these methods of physiological analyses and insisting upon their great utility and precision in determining minute quantities of powerful poisons, while pointing out the great assistance afforded by these methods for the identification of alkaloids, we beg also to present to you the facility to be obtained for the separation of combined alkaloids, on account of the variation of the time required for each alkaloid to pass through the animal system.

To say, as has been said in recent years in this city, that the combination of alkaloids in a case of poisoning renders the toxicological work impossible or its evidence valueless, is worse than pretence—it is ignorance.

Throughout a long series of experiments, we have yet to find an alkaloid which we were not able to identify by these methods of animal filtration and analysis, alone or conjoined with methods of chemical examination and control.

SOME SUGGESTIONS RELATIVE TO THE TREATMENT OF TUBERCULOSIS.

BY F. M. POTTINGER, PH.D., M.D.,
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TUBERCULOSIS we have always with us. We have grown so accustomed to it that we accept it as a part of the inevitable, and heretofore we have dealt with it in a sort of "let alone" fashion. While the disease was known to the ancients and while it has decimated the ranks of mankind throughout the ages, it was reserved for the last quarter of the nineteenth century to discover the nature of the disease and to lay down rules for its eradication; and it is still reserved for the first quarter of the twentieth century to see that these rules are enforced. May we, of this generation, gladly take up this work and hand down as our heritage to mankind "the destruction of the power of the great white plague."

The discovery of the tubercle bacillus as the cause of tuberculosis in 1882 by Prof. R. Koch gave a new interest to the disease. While this discovery shattered most of the previously held theories, Prof. Koch's work was so thorough that it did not admit of contradiction. Since that time the entire subject has been reconsidered, and, with the new impulse given by the discovery, the subject has been investigated as it never could have been before. Much that was old has been discarded and much that is new has been revealed.

Of all the revelations made, that which is of greatest importance and which is fraught with the greatest good to the human race is the fact, which has been established beyond peradventure, that tuberculosis is a curable disease. But this idea is not new. Hippocrates said: "Phthisis, if treated early enough, gets well." These recent investigations, however, have served the purpose of bringing this fact before the modern profession and of impressing it upon them. Growing out of these investigations has come the organized effort to stamp out the disease. Tuberculosis congresses have been held. Public and private aid has been solicited, sanatoria have been constructed, laws enforcing care upon the part of those afflicted have been passed, pamphlets giving general information for the public have been circulated, and a general effort on the part of the medical profession is being made whereby they may learn to diagnose the disease in its early stages, and whereby they may be able to cure the disease when recognized.

That the profession is changing its attitude toward tuberculosis is very evident to a casual observer, and this change is becoming more evident every year. When the writer was a student in 1893, he heard an able teacher dismiss the treatment of tuberculosis with the following: "What shall be done for these unfortunates? In the early stages, cod-liver oil. In the late stages, morphia." Fortunately for these unfortunates, able teachers are learning better. They know that a tuberculous patient is not doomed. Prof. Brouardel,[1] before the recent London Tuberculosis Congress, made the following statement: "Phthisis, therefore, is curable, even in its most advanced stages. This is not only maintained by anatomopathologists, but by all medical men who have made a special study of the disease." He then quotes Grancher, approvingly, who says: "Tuberculosis is the most easily cured of chronic diseases."

If tuberculosis be curable, why is it allowed to reap annually such vast harvests? In the first place it is due to the conservatism of the medical profession, which is very slow to recognize the results of those who are curing tuberculous patients. In the second place the laity takes a hopeless view of the disease. Both medical opinion and public opinion must be changed and the truth must be heralded forth that there are help and hope for the tuberculous.

The first and most important consideration in the cure of tuberculosis is early treatment. Experience shows that of incipient cases the vast majority will get well under proper treatment. Turhan[2] of Davis says that 97 per cent. of his early cases should be permanently cured, while only 17 per cent. of the later stages show hope. Trudeau[3] shows 300 cases of incipient tuberculoses of which 68 per cent. were cured, while of 900 advanced cases only 11 per cent. were cured. Von Ruck,[4] in a series of 73 incipient cases, shows 94.5 per cent. cured. Such statistics are in accord with those of other observers and are eloquent in their appeal for early diagnosis and treatment. If 75 per cent. of incipient cases can be cured (and we believe this a very low estimate) should we not strive to bring our patients under proper treatment at the favorable time and save these precious lives?

While the aim should be to treat the patient in the early stage, it must not be forgotten that much can be done for those advanced in the disease. Quite a percentage of cures are reported among second-stage cases, while it is not at all uncommon to see third-stage cases recover. When a cure is not effected, oftentimes the patient is so improved that his life is prolonged for years. A report[5] from all the sanatoria of Germany which has been recently published shows that nearly all cases can be improved. Of 6,108 cases 87.7 per cent. were either cured or improved. These results were obtained in patients two-thirds of whom were beyond the first stage.

Fortunately for the afflicted, we have to-day means at our command which make it unnecessary to wait for baccilli to appear in the sputum in order to make a diagnosis of tuberculosis. Just a few years ago we rejoiced because we could confirm a diagnosis of tuberculosis by the microscope when the lung contained evidences of consolidation and cavity formation, when the patient was pouring out baccillus-laden sputum in large quantities, and when clinical symptoms and physical examination should have made the diagnosis certain; but now clinical observations and pathological studies have furnished us with so complete a picture of incipient tuberculosis that we can recognize it in a large percentage of cases simply by physical examination and by the clinical history. However, it is fortunate, if we are not able thus to detect it, that we have other means which will confirm or disprove our diagnosis. I refer to the tuberculin test.

That the value of the tuberculin test has not been recognized is due to the same prejudice which has blinded the profession to its value as a therapeutic agent. The tuberculin test is safe and reliable, and there is no reason why any man who is fitted to handle such remedies as morphine or strychine is not capable of administering it. Heron,[6] in his address before the London Tuberculosis Congress, said: "I am strongly of the opinion that it (the tuberculin test) is at least as safe as is any other very potent drug." Prof. Koch[7] has observed over 3,000 cases in which the test was made and concludes that its reliability is almost absolute. He has never seen disadvantageous effects follow its use when administered as he directed. Prof. Osler[8] says that tuberculin in his experience is harmless and that it is used as a routine diagnostic agent in the

Johns Hopkins Hospital. Trudeau,[9] one of our best and most conservative men in the line of phthisiotherapy, says of the tuberculin test: "In my experience it has proved generally reliable and free from any ill-effects, and has many times enabled me to insist on prompt and radical measures of treatment months before a conclusion as to the nature of the disease could have been reached by the usual methods."

It is to be hoped that the medical profession will acquaint itself with the tuberculin test and employ it in all doubtful cases, and thus give those afflicted with tuberculosis the advantage of an early diagnosis, which means an almost certain cure provided the proper treatment is instituted. The first indication in the treatment of tuberculosis, which is early diagnosis, will be met when the profession has learned the value of this test.

If the diagnosis be made in this most favorable period, before bacilli have appeared in the sputum, the battle is half won. But whether made then or later a strict course of treatment should be immediately instituted. *It must be remembered that the tuberculous patient is a sick man, whether he has cavities in the lung and his vitality has been sapped by prolonged absorption, or whether he is in the incipient stage with a small cup of tubercles in one apex, a slight loss of vitality and an elevated temperature of one-half to one degree. The patient who has lost one-third of his body weight, whose cheek is flushed from hectic fever and whose strength is so nearly gone that the least exertion tires him, was once in the incipient stage, and the chances are that, had his disease been discovered at that time and had proper treatment been instituted, he would have been cured and saved this prolonged suffering and rescued from impending death.*

A tuberculous patient is as sick as a man with typhoid or pneumonia, but he does not know it. His chances of living are far less, because he does not feel ill, while typhoid and pneumonia patients are seen to take to their beds and place themselves under proper supervision. It may be difficult to make those in the incipient stage of the disease believe that they are ill, but the argument is all on one side, and a physician is nothing unless he can surmount difficulties. We must throw away all such expressions as "weak spot in the lung," "throat trouble" and "bronchial tubes affected." *Instead of making light of incipient tuberculosis and allowing the patient to fritter away his chance of recovery, we must institute curative treatment. Instead of ignorantly carrying the patient to the grave, we must guide him intelligently to health and life.* The criminal is just as much doomed when the sentence has been passed as if the rope were around his neck, although he may not feel any differently than during trial; so the tuberculous patient is just as ill in the incipient stage as he is when death is approaching; and, as the time to seek clemency for the doomed man is as soon as the sentence is passed, so the time to seek health for the tuberculous is as soon as the disease has begun.

The treatment of tuberculosis is the treatment of the individual. Routine can be followed so far, but for best results we must individualize. In all cases we have two factors to deal with—the individual constitution and the disease. The latter can be combated with the same remedies in most cases; but the former must be treated entirely according to the case.

For the treatment of the disease itself many things have been brought forth as specifics; but one by one they have given way before the weight of medical opinion until the profession has almost lost hope of ever finding such a boon. Anything that is mentioned as having a specific action in the treatment of the disease is tabooed before it is announced. It is given either a half-hearted trial or no trial at all and is then cast aside among the "forgotten."

The culture products have been struggling against this doubt and hostility for ten years; yet it is the opinion of all of those who have given them an extended trial that they do have a specific action, which warrants their use. It is a noteworthy fact that the number of men who are using them is increasing every year.

While I do not wish to enter into a full discussion of culture products, having done this in a previous paper,[10] I wish to state two reasons which, to my mind, establish them as specifics and call for their employment in cases of tuberculosis. First, they stimulate tuberculous tissue to repair, showing a selective action upon it, which may be observed in visible tuberculous lesions or may readily be detected by the stethoscope when the seat of the disease is in the lungs. Second, they produce an immunity. This is demonstrated by the fact that, while the great tendency of the disease is to extend along its borders, cases treated by these products rarely show such extensions. There is also a general immunity conveyed which protects the patient from relapses and which alone justifies the use of these remedies even if they were utterly worthless in all other particulars.

For these reasons, which I have demonstrated many times in my practice, I believe that culture products should be used in the treatment of tuberculosis as the means of combating the tuberculous foci.

This, however, as I said, is only a part of the treatment. The individual must be treated. Here routine is not permissible, but every idiosyncrasy and every characteristic of the patient must be considered. One has this complicating disease, another has that; this man has business worries, another has family troubles; this man needs encouragement, another must always be held in check. All these things must receive the physician's attention that he may put his patient in a condition which will best further his recovery. These measures are aimed at increasing the recuperative and resisting powers.

The tuberculous patient requires few drugs.

All that have a tendency to interfere with digestion should be avoided. The patient's stomach is to him what the boiler is to the engine and must be guarded with zealous care. Instead of drugs the employment of the natural remedies, such as water, air, rest and carefully-regulated exercise, will suffice in most cases. When remedies from the Pharmacopœia are needed, use them of course, but the hope of curing tuberculosis by the administration of drugs is not only fruitless, but in many cases injurious.

The thing that worries the patient most, as a rule, is the cough, and the indiscriminate use of cough mixtures in the early days of treatment has ruined the stomachs of many patients, rendered their illness much harder to bear and in many instances hastened the end. This symptom can be combated, as a rule, by other means. In the first place it should be determined as nearly as possible what is causing the cough. Is it due to a congestion of the lungs from overexertion? If so, prescribe rest. If it be due to pharyngitis, laryngitis or tracheitis, relieve it by the proper local applications, intratrachial injection, nebulæ, and sprays. If it be a nervous cough the patient should repress it. If it be due to the accumulation of mucus in the bronchial tubes, this must be coughed up, but we should do all in our power by the proper management of the case to relieve all local catarrhal irritations and to assist Nature in healing up cavities so that this may be avoided. When these measures are adopted the need for cough mixtures will be rarely felt. It is a common experience with me to see patients who come complaining of severe and protracted coughing spells freed from their distress when their lives are so regulated that they cease to cause local congestions by constant overexertion and when the upper air-passages are relieved of sources of irritation. So important is it to relieve patients from all sources of cough that the upper air-passages should receive the constant care of the physician during the entire period of treatment. While one may not be able to apply antiseptics in the form of nebulæ and sprays in sufficient strength to destroy bacilli, and while such treatment must not be considered as having a direct action upon the tuberculous foci, nevertheless it should be carried out as a measure for giving comfort to the patient and indirectly to aid in recovery by relieving cough and thus sparing the patient useless and unnecessary fatigue.

It is not my purpose to outline in detail any line of treatment, for each case must be treated individually. When the disease is discovered, the question to decide is, What can best be done to increase the resisting powers of the patient and what can be done to attack the disease? When the physician has once determined upon his course he should demand absolute obedience on the part of the patient. I find this obedience is not hard to secure in most cases, if one will only take a little time and explain to his patient *why* he wishes him to do the thing asked. The best patient is the intelligent patient, and he stands ready in most cases to coöperate with his physician.

If the investigations on the subject of tuberculosis during the past few years carry any message to the medical medical profession in this, the beginning of the new century, it is this: "Tuberculosis is both a preventable and a curable disease and it demands the intelligence of the medical profession to cure those afflicted and to save the healthy from infection."

The tuberculous patient must be treated. No greater error can be committed than to turn these unfortunates away to shift for themselves. So often patients come to the great sanitarium of the Southwest with the advice from their home physician: "Let medicine alone, stay out-of-doors and rough it; take all the exercise you can." What is the result? The patient comes to a new climate of which he is totally ignorant. He is buoyed up by the change of air and the hope of getting well and, remembering his physician's faulty advice, commits one indiscretion after another, overexerts himself and soon weakens his constitution and ruins his chances of recovery. Or being among strangers, he becomes homesick, loses appetite and weight and counteracts all the good that the most perfect climate could do. Those most experienced in the treatment of tuberculosis are almost a unit on the point that a tuberculous patient is better off with intelligent treatment in a bad climate than with the best climate without such guidance. Upon this point, I quote Yeo.[11] "The patient, if left to his own devices, may make bad use of a good climate, while with skilful guidance in a sanatorium he may make good use of a bad one. *Care without climate is better than climate without care.*"

Those physicians who do not practise in our health resorts hear of wonderful cures of patients who "stayed in the open air, took all the exercise they could or who roughed it." We, too, see those cases. They get well in spite of themselves and are more of an argument in favor of the curability of the disease than of the method of curing it. For every one who is thus cured there are many who fall victims to their foolishness who could be cured by intelligent treatment. Every one of these cures encourages us in our fight against the great destroyer. With a united effort on the part of the medical profession there is no reason why this, the greatest enemy of the human race, could not be shorn of its power.

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THE SMALLPOX PROBLEM.

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Connected with the problem of how best to treat smallpox, there is an unknown equation which cannot be resolved with algebraic accuracy; it is not capable of such evidence as relates to mathematics, for if we subject the question to a rigid investigation, we immediately perceive the immense difficulties of attaining such results as sanitary science can sanction and adopt. It is beset with difficulties on all sides, surrounded by conditions that are injurious, and results in issues that are dangerous tending to interrupt the possibilities of relief.

The special obstacles confronting the investigator and the most important data bearing upon the subject are as follows:

1. The extreme and continued ignorance of the public generally respecting the disease and the means which modify and remove it, as well as in regard to vaccination.
2. The injurious interference of antivaccination, Christian Science and vaccinophobia due to ignorance, dishonesty and insanity, and certain to disturb, obstruct and overwhelm the normal order of prevention and safety.
3. Ignorance respecting the efficacy of isolation, quarantine and disinfection or a lack of appreciation of their preventative value; also allowing the anxieties, wishes, hopes, fears or other natural emotions of the patient or his friends to be paramount.
4. The misconceptions and misappreciations of the members of the medical profession of the importance of the principles advanced by sanitation, also the established fact that many are wonderfully slow in recognizing the real nature of the disease.
5. The lack of uniformity in sanitary laws and the indifference shown by many authorities in their enforcement.
6. The employment and countenance of physicians as health officers who, for political reasons, have obtained the reputation of greater activity and boldness through their very ignorance of the true character and indispensable requirements of sanitation.

It is obvious, therefore, that to obtain a field wherein to try this question of "how best to treat smallpox" we must go beyond the limits of ordinary practice and a mere text-book training.

The first obstacle in the path of prophylaxis, impending the attainment of the truth in regard to this disease, lies in the circumstance that the masses are lamentably ignorant of the measures necessary for its prevention. Even the extent of ignorance prevalent among the better educated classes is something remarkable. Knowing absolutely nothing about the principles upon which the practice of vaccination is founded, they are recklessly and shamefully negligent in applying this inestimable method which gives immunity from smallpox. Just as a right education is a prevention of crime, and far cheaper than the machinery for its detection and punishment, so is vaccination a prevention of smallpox, and cheaper than the appliances for its cure.

However favorably the sanitarian may look on vaccination, the lay public fears certain dangers in connection with it. First, it apprehends the transmission of other diatheses, such as scrofula, tuberculosis, syphilis, gout, rheumatism and bovine diseases. Secondly, because difficult of comprehension, it is coolly disregarded. The means contemplated to convey more correct views of the relation of vaccination to smallpox will be facilitated, and the hands of the sanitarian strengthened by educating the people concerning these prepossessions and prejudices. The community should be afforded opportunity to become acquainted with the usual or special causes operating to prevent it. The approach of an epidemic would then be at once known and could be speedily antagonized.

Then the want of power to weed out the various "antis" and the deluded obstructionists is much to be lamented, as prophylaxis will cease to be empirical only when the proper amount of knowledge shall be fully obtained by the laity.

There is, perhaps, nothing that has so long kept in abeyance the point at issue, or contributed to throw discredit on the idea of protection connected with vaccination, than the opposition to compulsory measures. The fundamental evil of the energetic and meddling practice of the "antis" is that, while not possessing in itself any power of checking or mitigating the pathological processes, it interferes with Spencer's law of equal freedom It is a game of bluff, the mischievous practice of the fanatic and demagogue who is ever ready to utter the cry of infringement of personal liberty. In their blind devotion to their visionary hypothesis, they overlook the most positive means of preventing smallpox. Like the witches and impostors of old that have always held competition with physicians, they care nothing for the safety and health of the public, but are continually striving to induce it to swallow falsities for facts. Let those who oppose vaccination as an infringement of personal rights answer these questions: Why not rob, murder, or cause the lesser outrages of the ten commandments? Why enforce compulsory education and poor laws? The point need not be argued that, as a necessary consequence of the existence of smallpox, since life, property and liberty are indispensable to equal freedom, the State in some form should protect the health of its individual members, for one of the commonest and most imperious instincts of our nature impels us to avoid impending suffering and to escape from it if already upon us.

The sin of neglect is unpardonable, as the Lord has ordained exact laws for the selection of preventative measures to stay disease. The time has come to dispense with hypothesis and theory. In sanitation, the ultimate appeal must be to facts which true science has discovered, arranged, combined and rendered unanswerable. It is a merciful work to clear away the gross perversions of mock science, even when hid under the appearance of religion. As Dr. J. M. Toner so aptly puts it, "Parents and guardians have no more right to withhold or neglect to provide vaccination for the children under their protection than they have to jeopardize the lives of these helpless infants by not furnishing them with food and clothing. It is criminal to neglect either, as death may be the consequence; but the failure to provide protection against smallpox seems to be more maliciously wicked than to neglect either food or clothing, as the former may not only cause the death of the child, but be the means of spreading disease and death among many others; while the evil which arises from the latter ceases with the death of the victim."

Another agency that adds to the dissemination of this loathsome disease is that of the careless practitioner and incompetent health official who are frequently called upon to diagnose some suspicious skin manifestation, which may or may not have caused sudden alarm in the community, to decide whether that danger signal be well or ill founded and whether the affection is or is not smallpox. It is not too much to say that a professional reputation is at stake, for it may be seriously marred if subsequent events prove such an opinion to have been inaccurate.

Again, errors are constantly committed by medical men in coming to their conclusions, as the ordinary mind cannot rise above its limitations. Thus, we have ignorant, reckless and dishonest practitioners who, from one cause or another, such as inexperience, indolence, indifference, or deception, place a false value upon things of life in their attitude toward the seriousness of the matter in hand. Further, to increase the disastrous blunders of this clan, one need only include a disqualified health official who, perhaps, from a sympathetic interest in their short-comings, has been inaugurated into office through the avenues of patronage. It would appear, from the number of cases of smallpox universally prevalent throughout this country, that an instructor on sanitation ought to be sent among this class to open the way to medical civilization. I believe that the prevention of contagious diseases can only be brought about through the conclusions of a long and careful experience, directed and enlightened by an independent spirit and held in check by that philosophical scepticism which is so rare, but is essential to all correct scientific investigation.

Another difficulty connected with this question is the lack of qualifications in our health officials, which certainly are not always commensurate with their duties and responsibilities. The most obvious cause leading to this result is this: The defect existing in almost all of our medical schools in having no distinct chair for instruction in sanitary science, and the consequent neglect of it, or very inadequate attention given to it by the professors of some other department in whose courses alone any consideration of it could be expected. The establishment of such a chair in every university, college and high school is a crying necessity.

Sanitary knowledge, if instilled into the mind in the early part of the student's career, would act as a perpetual and ever-ready help to clear up many of the greatest obscurities of sanitation and enable him to avoid much of the deceptive logic, and many of the false conclusions which are inseparable from ignorance of premises essential to diagnostic investigation. Without such instruction in his early progress to enable him to find the right way, it is no wonder that his subsequent career should be beset by doubt and error.

The legitimate vocation of the physician is to mitigate or cure diseases; that of the sanitarian is to prevent them. The comparative power of the former with the latter to save life appears to be very circumscribed. The practitioner possessing no other means of combating diseases but the feeble and uncertain armory of drugs must look up for consolation in his difficulties, in his blind gropings, and amid the insignificant or dubious results of his labors, to sanitation. It should be a comfort for him to know with certainty that any disease that is communicable is preventable. It leaves no room for doubt as to its vast powers, or as to the incalculable good worked by these in the cause of humanity. The advent of such a desirable revolution as the establishment of a department of preventative medicine is clearly indicated, and the question is destined through its very indispensability to receive proper consideration in the near future.

It should be made indispensable that health officers qualify by a course of study in sanitation before being eligible to office. The necessity of such a course is apparent, for, owing to the want of proper qualifications in these officials who furnish the vital statistics which incite and direct sanitary activity, much has been left undone and much accomplished that has not been creditable. The privilege of naming the health officer and of selecting his subordinates should be denied the political boss. The selection should be guided by knowledge, not by ignorance such as contemplating a reduction in the death-rate of preventable diseases, and it always keeps in view the comfort and happiness of society. The health official should find, moreover, a perennial and lively stimulus to exertion in the hope that the time may yet come when the epidemic visitations of such diseases as smallpox, typhoid fever, cholera, and pestilential diseases in general shall become a matter of history. Such consummation is, no doubt, remote, but it is no less sure. The diagnosis of well-developed smallpox is not necessarily difficult, but in an epidemic where the variolous contagion presents itself in such a variety of forms, only a few of which are remarkable for their severity while the majority are noted for their exceeding mildness, it is not strange that mistakes have hitherto been made, while it is impossible to give an absolute opinion before the appearance of the eruption; and even at the first appearance of the papules no one should be blamed for being in doubt as to whether he has to deal with a papular erythema or a papular form of measles. Epidemics that have features of intermediate forms have not been of common occurrence. With mildness of prodromes, scarcity of eruption, and the appearance of the disease in successive crops, with brevity of duration and a lack of distinctness in the characteristic developments, a likeness to chickenpox is presented that demands cautious and conservative procedure in diagnosis.

Instability and variation have been characteristics of the present epidemic, in contradistinction to the fixedness and permanency of previous ones. With these difficulties before the physician who is conversant with smallpox only through text-book description, it is not to be wondered at that serious errors have occurred.

We may state from observations that have not been limited to characteristic cases that the distinctions to be noted are not as to the phenomena of the whole, but particularly as to mode and degree of expression. For the purpose of fixing with certainty the points of differential diagnosis and, in an equal degree, in order to determine a principle of treatment, the physician should endeavor to show not only the dissimilarity existing between these two morbid affections of the skin, but their analogy as well. Recently the inexperienced have frequently mistaken the vesicular summit of the smallpox papule in its slow growth, prompt suppuration, and fibroid degeneration for the true vesicle of chickenpox which necessitates no such nice observation. It is not of doubtful appearance; its superficial seat and transparency are perfectly appreciable to the eye, requiring no rigid examination, no exploration of the needle or lens. The careless have overlooked the fact that an epidemic eruptive disease attacking children and adults alike cannot be chickenpox. After the prompt recognition and bold announcement of infection from smallpox should come our ability to cope with it practically and successfully.

It is evident that success in this matter necessarily depends on an enlightened system of isolation, quarantine and disinfection, based upon a thorough understanding of the origin and transmission of the disease, the duration of isolation and quarantine to be regulated by the period of incubation and the period of infection. The enforcement of these regulations should be accomplished by members of the police department rather than by doctors or sanitary inspectors. The orders should emanate from a central authority and their execution should be prompt.

Isolation, to be effective under ordinary circumstances, cannot be accomplished at home, owing to the reluctance of the afflicted families to maintain it. To prevent its spread to other individuals or to the community generally, the patient should, therefore, be immediately removed to a suitable hospital, no distinction being made between pauper and non-pauper cases. As mainly from ignorance and superstition a large portion of the afflicted population refuse to enter a hospital or to be vaccinated or isolated, such objections must be promptly grappled with by the strong arm of civil law.

The saving of life in case of the decisive execution of proper sanitary laws would not only materially modify our tables of mortality, but benignantly affect the fortunes of nations. In order to secure the full benefit from isolation, it is necessary to impose a period of quarantine, regulated by the duration of the incubation stage, in cases of all those previously coming in contact with the affected person. It is obvious that, unless this precaution be observed, the object aimed at, namely, the stamping out of the disease, may be defeated, for others by whom the poison may be disseminated broadcast may already have contracted it. Of the potency of quarantine to strike at the root of this troublesome malady and thereby to save life without the penalty of previous suffering, there can be no doubt. If the attention of society were fully given to the subject, an ample compensation for all labor attending investigation would be found in the proportionate development of the department of preventive medicine.

Of course, to carry out the hygienic processes to their possible and practical extent, we must likewise disinfect. The following are the essential conditions of a true disinfectant: (1) It must be capable of killing germs and their spores; (2) it must be applied to every part; (3) in sufficient strength; and (4) for a sufficient time. These conditions have been established by experiment—the only safe method of arriving at a conclusion—and until all are complied with the danger it not averted.

In the treatment of smallpox, vaccination, isolation, quarantine, and disinfection must always be admitted to exhibit the least equivocal successes and to assume the most splendid triumphs of the medical art.

How best to secure protection from the ravages of smallpox, or from any pestilential disease, must continue for some time to engage the attention not only of sanitarians but of medical men throughout the country. The rapid progress which popular sanitation is making in some of the States of the Union is a subject for hearty congratulation among ourselves and a cause for devout gratitude to Heaven. The tendency of the times, necessitated by the testimony and experience of history, is toward centralization, uniformity and simplicity. This is exemplified in National policy and commercial combinations. Interstate laws have been recognized necessary in fields too numerous to mention here, while the discussion of many others is constantly going on with the purpose of securing other benignant and effectual results. The one great need of the present time is the uniformity of laws relating to health, particularly to contagious diseases. The rapid means of transit at the present day, the interstate and international commerce and travel which exist and will continue to increase, must necessarily, from the nature of things, lead to epidemic visitations of such violent diseases as cholera, yellow fever and smallpox, unless some organized system and well-reorganized legal enactments are authoritatively interposed for general protection.

Sanitary laws, now beginning to be more properly interpreted by an enlightened public, testify to the fact that sanitary science has no country and comprehends no boundary—it is for the world at large. The difference in the requirements of the different States causes inefficiency, difficulty, expense, trouble and evasion. The most careful and protective laws and procedures in one section may be impaired most seriously by the reverse conditions existing in an adjacent State, county or city. With a uniform sanitary system and laws throughout the country, aggressive action could be maintained, the public educated, and the dire results of many epidemics avoided. How much more efficient in such a case would all our methods for the treatment of smallpox become; for with varying requirements, indifferent vaccination, and lack of quarantine, isolation and disinfection, its management cannot be made either efficient or effective.

There are among us thousands of persons whose once darkened minds have been so illuminated with wisdom on this subject as to beget an intolerable impatience under old imperfections. May their number increase, until anything less than a uniform and universal sanitary code shall be impossible.

MEDICAL PROGRESS.

PEDIATRICS.

Elimination of Iodides in the Milk.—The iodides introduced into the organism in the form of a solution in oil and by means of intermuscular injections are eliminated by two routes, the milk and the urine. According to M. Flamini (Revue Mens. des Maladies de l'Enfance, Mar., 1902) the percentage of the iodides in the milk is about half of that which appears in the urine. The quantity of iodides in the milk increases with the increase of the dose; it also increases with the degree of saturation of the animal, from which fact appears the necessity of carrying the administration of the iodide to the point of saturation in order to obtain a desirable amount of iodide in the milk. The maximum quantity of iodide recovered by the author from milk, amounting to 0.12 gram per liter, obtained by means of quite small doses, leads him to believe that by means of the augmentation of these doses it is possible to obtain in the milk sufficient iodide for therapeutic purposes. The intervals between the injections can be regulated so as to secure a uniform percentage of iodide in the milk each day. More than half of the iodide in the milk is dissolved in the serum, and the remainder is in combination with the proteids. Part of the iodide in solution in the serum is also in organic combination. The administration of iodide, as described, and for a long time, produces no injurious effect on the composition of the milk. The animal thus treated presents neither general nor local reaction, and stands perfectly well the drug injected.

Primary Infantile Atrophy.—The discussion of the causation of this obscure condition of infancy, with reference to the recently discovered soluble ferments in maternal milk, is the task pursued by L. Concetti (Archives de Médecine des Enfants, Mch., 1902). It is necessary to distinguish two types of infantile atrophy, primary and secondary. The latter is the more common form and is to be attributed to either insufficient food or food badly adapted to the infant. According to the author, the picture of true primary atrophy is afforded by those children who, on account of an innate defect in their organism, find themselves unable to profit by an alimentation quite in conformity with the rules of physiology and hygiene. To profit by a food, two acts are necessary, digestion and assimilation. True primary infantile atrophy may result from a defect in the former, corresponding to a disproportion between the demands of an exactly physiological food and the directive activities of the digestive ferments. A defect in the act of assimilation may result in primary infantile atrophy, which defect manifests itself in a disproportion between the elementary principles absorbed in the intestine and circulating in the blood and tissues, and the biological activities (assimilatory ferments) by which they can be transformed into living cellular protoplasm. It is generally known that in infants the activity of the digestive enzymes is much less than that in the adult. The amyolytic ferment is found in appreciable quantities only in the fifth or sixth month of life. In the first few months lipase is capable of splitting finely emulsified fats; but it has no effect on fats that arrive in the intestine in the form of large drops, which are passed out of the intestine, the condition being recognized as a "fat diarrhea." The fact that certain infants cannot digest milk is to be attributed to a congenital defect in the production of the digestive ferments, and a retardation in the development of glandular activity in the intestine. Recently several investigators have demonstrated the presence in woman's milk of certain digestive enzymes, which in the case of cow's and goat's milk are of a different nature and of an activity and proportion much less than those in woman's milk. These enzymes, which are supposed to supplement the action of those in the gastro-enteric canal of the infant, are destroyed at a temperature of 70° C. From this point of view, the sterilization of milk cannot fail to vitiate the conditions of artificial alimentation, above all for certain infants. Clinical experience has demonstrated this. It has also shown that asses' milk most nearly approaches the human. This is borne out by chemical analysis, for from the point of view of the digestive ferments contained in it, asses' milk occupies a middle place between human and cow's milk. In the same way as the production of the digestive ferments is reduced in infants, the trophozymases, or enzymes that preside over the assimilation of the digested products into living protoplasm, by a natural and analogical law, would be less developed in the infant than in the adult. Moreover, there are certain conditions that retard or render inactive the production of these enzymes. Among these are prematurity in the infant and the following conditions in the parents: Syphilis, tuberculosis, youth and old age, consanguinity and the neuropathic constitution. There are also certain morbid states in the early months of life, above all infectious diseases and infections from the gastro-intestinal canal, that have a pernicious influence on the development of the trophozymases, as the result of which the infant falls rapidly into a condition of marasmus. The failure in the trophozymases may go hand in hand with failure in the digestive variety, or the latter may be normal while the former may be diminished or defective. In certain congenitally syphilitic and tuberculous infants, pronounced constitutional atrophy is frequently observed in spite of the presence of a great voracity of appetite, and in spite of the perfect functioning of the digestive ferments. These cases of syphilis and tuberculosis, even when exceptionally they can tolerate it from the standpoint of the digestion, fall sooner or later into atrophy under the influence of artificial alimentation. The trophozymases are elaborated in the organism of the mother and excreted in the milk. Analogous to this is the elimination of toxins and antitoxins, agglutinins, alexins, and certain injurious substances produced during menstruation and under the influence of violent emotions. In the milk of cows and goats, the trophozymases are found in smaller quantity than in that of human beings, reasoning by analogy from the relative differences in the case of the digestive ferments. Moreover, the trophozymases of one animal are not the same as those of another. This shows the superiority of maternal feeding over artificial alimentation. The fact that heating to 70° C. destroys the activity of these ferments explains the phenomenon that has long been observed but not understood, namely, that infants thrive better on unboiled than on boiled milk, provided, however, that the milk is fresh. It has been found, at least in the case of certain of the digestive ferments, that the zymases are not specific in woman's milk, but may be made to appear in cow's and goat's milk at will by changing the character of the animal's food, and, what is of greater importance from the practical standpoint, by feeding the animal upon the ferments which one may desire to have appear in its milk.

Benign Hemorrhagic Scarlatina.—When hemorrhages of various kinds occur in the course of scarlatina, the case is usually recognized as one of malignant type. BOUYER (Archives de Médecine des Enfants, Jan., 1902) reports a case of scarlet fever accompanied by considerable hematuria, petecchiæ upon the trunk and lips, and severe epistaxis, in a child four and a half years of age. The hemorrhages decreased and finally disappeared, and at the end of three weeks the cure was complete. In view of the universally fatal character of cases of hemorrhagic scarlatina, the author surmises that probably the hemorrhages occurring in this case are to be attributed not only to the scarlet fever, but also to a hemophilic tendency, shown also during an attack of measles when the same child was three years old by severe epistaxis.

Heart Disease in Children.—It is generally admitted that the prognosis for heart disease in children is, on the whole, unfavorable. W. MACKENZIE (Intercolonial Med. Jour., Feb. 20, 1902) endeavors to show the importance of a healthy heredity. He believes that pericarditis and not endocarditis is the common lesion found in pure rheumatic hearts. In syphilitic patients, however, the endocardium, never the pericardium, was affected. In any child showing symptoms of early and rapid heart failure after the initial endocardial attack, lues must be suspected. Dropsy is not seen in the early failures of rheumatic cases, but it is characteristic of syphilitic patients and, if the child live long enough, it is probably largely due to syphilitic arteritis. It is usually irresponsive to treatment and frequently ushers in the end.

Infantile Convulsions.—Infantile convulsions may be divided into two main groups, symptomatic convulsions due to disease of the central nervous system (meningo-encephalitis, tumors, hemorrhages, etc.), and idiopathic or essential. The latter group includes three main forms, external convulsions (eclampsia), internal convulsions (spasm of the glottis), contractions of the extremities (tetany). The idiopathic forms were studied as to etiology and symptomatology by PROF. D'ESPINE (La Méd. Moderne, Apl. 9, 1902). **Heredity** plays an important part in causation. The influence of rickets is that of an auto-intoxication. Dentition is of no importance. In the newborn convulsions are usually due to organic lesion and the prognosis is grave. Often asphyxia is a cause, and is due to congenital cyanosis, whooping-cough, bronchopneumonia. Many cases are attributed to poisoning by lead, alcohol, opium, santonin, etc. The most frequent cause is auto-intoxication (uremia, athyroidism, hypertrophy of the thymus, gastro-intestinal disease). Reflex eclampsia may be due to irritation of the skin, ears or digestive tract. Clinically, eclampsia in infants is preceded by a stage of hyperexcitability of the nervous centers, manifested by hyperesthesia, exaggerated reflexes, electrical hyperexcitability. As to form, the convulsion is neither purely tonic nor clonic; exceptionally a purely tonic convulsion may occur. Commonly the spasm begins at the eyeball, extending to the face, neck, extremities and trunk; if localized, the face is usually the part involved. Bilateral symmetry is the rule; exceptionally the spasm is exaggerated on one side. Spasm of the glottis is characterized by a series of inspiratory or expiratory sounds; the paroxysm may end fatally by syncope, but typical cases are described which were saved by tracheotomy or by intubation. Spasm of the glottis is characteristically a disease of the first year of life; more than 50 per cent. of all cases occur during the first six months. Compared with general convulsions or with spasm of the glottis, tetany is a rare condition. In 10,000 infants, tetany occurs 6 times; spasm of the glottis, 31 times, eclampsia, 61 times.

Modification of Breast-milk by Diet and Hygiene.—Many physicians as well as mothers are willing to substitute modified cow's milk for mother's milk, even when only slight obstacles seem to make feeding from the breast difficult. No doubt the larger part of the responsibility for this unfortunate change rests at the door of the physician who does not sufficiently impress the mother with the dangers which are sure to arise. T. S. SOUTHWORTH (Med. Rec., Apr. 26, 1902) believes that, with persistence and careful attention to the regulation of the mother's food and her mode of life, the ordinary, difficult problems may be overcome. An analysis of the breast-milk will oftentimes at once suggest the proper method to be pursued. He cites several instances in which, after several weeks of fruitless endeavors by the family to make a child thrive upon breast-milk, he has so regulated the mother's food, exercise and bodily functions, and so trained the child in the regularity of its feeding, that after a few days of worriment and uneasiness the final results have been most satisfactory. The danger during the summer to bottle-fed babies is so great that every endeavor should be made to give them the advantage of mother's milk.

Summer Diarrhea.—A valuable experience is obtained in the treatment of this condition in the dispensaries of this city and C. G. KERLEY (N. Y. Med. Jour., Apr. 26, 1902) details the methods which are followed by him in several hundred cases each year. Milk is positively interdicted and not allowed until the stools approximate the normal, which may mean from forty-eight hours to several weeks. The most suitable and safest substitute has been the use of cereal waters and gruels. Barley is generally employed, sometimes rice. Two tablespoonfuls of Robinson's barley-flour are added to a pint of water and boiled twenty minutes and water is added so that one pint remains. Rice water may be similarly prepared, but must be boiled three hours. Beef, mutton or chicken-broth may be added to the barley-water in the proportion of one of the former to two or three ounces of the latter. Frequent changes are always welcomed. Brandy or whisky should seldom be given. Boiled water is frequently administered in small doses. Fever is relieved by sponging with water at from 86° F. to 90° F. Small divided doses of calomel or castor oil are always given at the beginning. Bismuth subnitrate must be used in large doses to be of any value. Ten grains every two hours are usually given regardless of the age of the patient. The indications for opium are pain, tenesmus and frequent stools, but a moderate diarrhea should never be controlled by this drug. In regard to the irrigation of the colon benefit is derived only in those cases in which there is something to be removed. A moderate number of green, mucous stools, with or without blood, will be benefited by an irrigation of simple saline solution. If there be fever the solution may be used as cold as 50 to 70° F., but if marked prostration and a subnormal temperature exist the solution may be 110° F. The elimination of severe cases depends largely upon the education of the mother, who should be taught to stop the milk and give barley-water and castor oil as soon as an evidence of derangement appears.

SURGERY.

Surgery of the Prostate.—After a complete résumé of the subject and a discussion of the older methods of treatment, J. B. DEAVER (Phil. Med. Jour., Apr. 19, 1902) urges that in suitable cases a radical prostectomy be done by the perineal route and that it be done early before periprostatitis has made the operation difficult and prolonged sepsis from cystitis and pyelitis have rendered the patient unfit for major surgical procedures. He reports five cases, with two deaths in patients who had been operated on "in extremis." The other cases presented the usual symptoms of frequent and later painful micturition, with retention, cystitis, and signs of an enlarged prostate. Through a median perineal incision, the gland was dissected free and enucleated; a soft catheter was then introduced into the bladder through the prostatic urethra, and the capsule lightly packed with gauze. Healing was prompt; in one case the fistula closed in fifteen days and the patient had perfect vesical control. In a second case, urine escaped from both openings forty days after operation, with only slight control, but the fistula was closing. In the third case the sinus was closing at the end of twenty days and but little urine passed by the urethra.

Ethyl Chloride as a General Anesthetic.—From an experience of its employment in over one hundred cases F. H. ROSE (Bristol Med.-chir Jour., Mch., 1902) highly recommends this anesthetic for brief operations, especially those about the nose and throat, for dental work, and for the removal of tonsils and adenoids. It was found to be safer than nitrous oxide, with a longer period of anesthesia and more complete analgesia. Recovery is rapid and no after-effects are felt. The author found no disturbance of respiration except in neurotics and alcoholics. He also gave it on four occasions to a woman with double mitral murmur without bad results. The use of a lint mask was found most useful, permitting the free admixture of air. Vomiting was very rarely observed; when present it is probably due to swallowed blood.

Traumatic Dislocation of the Hip in Children.—The rarity of traumatic dislocation of the hip in the young is attributable to the weakness of the thigh-bone as compared with the strength of the hip-joint ligaments, so that the bone breaks before the ligaments tear. It has, however, been seen in the young; Erichsen mentions two cases, in one of which the dislocation was pubic in a child eighteen months old and the other dorsal in a child six years old. A. L. OWEN (Lancet, Apr. 5, 1902) reports another case, that of a boy six years of age. The valuable researches of Bigelow and Allis into the methods of production and reduction of this dislocation have thrown much light on the subject. Even in the time of Hippocrates flexion was considered of importance in reducing dislocations of the hip. Owen's patient, a boy, admitted December 23, 1901, was kicking a ball, slipped and fell suddenly in a position of complete abduction of both legs; he was unable to get up, complained of pain, and was taken to the hospital. On examination the right thigh was found to be in partial flexion, abduction and internal rotation; the leg was completely flexed on the thigh and held there with the hand over the right ankle; there was evident pain upon passive extension of the leg. Further examination showed a classical dorsal dislocation of the hip. Chloroform was administered and reduction attempted in the usual way, the leg being flexed on the thigh, the thigh on the abdomen, and the extremity circumducted outward and brought into complete extension. It proved successful on the first attempt. Passive motion was begun in two weeks and at the end of the third week the patient was well and discharged without shortening, lameness, or impairment of function.

Surgical Treament of Banti's Disease.—In the case of this disease reported by L. TANSINI (La Riforma Medica, Apr. 1, 1902) enlargement of the spleen occurred some time prior to hepatic cirrhosis with ascites; from this fact, the theory is deduced that the liver lesion was due to irritation from a toxic substance elaborated by the spleen. Curative measures adopted were splenectomy and removal of ascitic fluid, followed by Talma's operation for the establishment of a collateral circulation through attachment of the epiploon to the parietes. Reaccumulation of fluid in small amount occurred shortly after the operation and paracentesis was practised to relieve tension of the abdominal cicatrix. By the third week increased ramification of the subcutaneous veins of the abdomen was noticed, and there has been no further occurrence of ascites. It is believed that an entire cure has been effected, the patient having been under observation for three months and continuing to improve.

Subphrenic Abscess.—The proximity of numerous important viscera to the diaphragm makes a determination of the origin site of collections and of pus difficult and important because it is necessary to evacuate them thoroughly at the earliest possible moment. The pus may be localized in the following zones: Right interhepatodiaphragmatic, limited on the left by the falciform ligaments; left interhepatodiaphragmatic on the other side of the same ligament, bounded by the left half of the diaphragm, left lobe of the liver and a variable portion of the anterior surface of the stomach; perisplenic, limited internally by the left extremity of the stomach and the pancreas, externally by the diaphragm or the ribs, above by the diaphragm and the tip of the left lobe of the liver, and below by the splenic flexure of the colon; retrostomachic corresponding really to the lesser sac of the omentum; extraperitoneal which corresponds chiefly to that part of the liver and the crura of the diaphragm not covered by this serous membrane; the abscesses may be non-gaseous or gaseous, constituting a true pyopneumothorax subphrenicus. The common causes he enumerates as traumatic, osseous, hepatic, splenic, appendical and metastatic as part of a primary suppuration elsewhere in the abdomen. The diagnosis rests upon the following symptoms: Intense, acute pain on one side, usually in the hypochondrium, with a distinct abdominal reaction; fever commonly high, accompanied by chills or chilliness, profuse sweats and a septic pulse. Dyspnea characterized by respiration limited to upper part of the thorax. The pain usually has some point of maximum intensity which the patient can indicate. The objective symptoms which it is important to distinguish are empyema at the base of the lung, subphrenic abscess and abscess of the liver. F. LEJARS (La Sem. Méd., 1902, No. 13) mentions the following points: The examinations must be conducted with the patient lying down and then seated. Inspiration will commonly show bulging on the affected side, edema of the skin, limited respiration, slight or marked fixation of the lower chest and abdomen. Later, spreading of the intercostal spaces with localized protrusion. Changes in size are confirmed by measurements. Careful, gentle, systematic palpation will reveal contractures of the muscles, great tenderness, usually a hard mass placed more or less low, displacement of the liver downward, or occasionally obscuration of its free border. The percussion will show marked dulness or flatness extending upward into the chest, obscuring that of the normal liver and extension downward of the liver dulness into the abdomen. Suddenly at the upper border of the mass, the percussion note becomes vesicular, suggesting that the lung is not involved. The same general facts apply to auscultation. Radioscopy will usually permit the diaphragm to be traced upward and over the top of the mass and will establish the displacement of the viscera; the liver is displaced downward and the heart upward. In empyema the displacement of the heart is always toward the opposite side. Having found the point of maximum pain and tenderness, exploration with the needle is most important. The technic of this the author defines as follows: The needle must be small and long, introduced through the skin and then, with a vacuum produced by maintaining the piston withdrawn, advanced to full length. The needle is slightly advanced inward; as soon as fluid is reached the syringe as a rule will fill. If the first puncture be negative, he recommends repeating this step at the same sitting many times before concluding that there is no pus. In the vast majority of cases it will be found, if patience, deliberation and judgment mark the use of the needle. Fuerbringer mentions the following sign as showing whether or not pus is in the thorax or in the abdomen. If the needle pierce the diaphragm, it will follow the movements of it. Its outer end lowers with expiration and rises with inspiration. If it be in the thorax, the reverse takes place. Pfuhl gives a sign much more reliable. If the pus has been found with a large bore needle in a cavity below the diaphragm, it spurts actively during inspiration and inactively or not at all during expiration. The final step is incision and drainage of the abscess.

A New Hemorrhoid Operation.—A method of removing hemorrhoids under local anesthesia is submitted by T. C. Martin (Jour. Amer. Med. Assoc., Apr. 26, 1902). He uses a special form of clamp—a hollow cone of which one quadrant is fenestrated and occupied by a movable blade with a serrated edge. Hence, after the instrument is introduced, it may be made to receive the pile without irregularly expanding the anus and thus provoking pain. The method is briefly as follows: After daily gradual dilatation of the anus by Kelly's conic dilator, the anoscope may be introduced and the wall of the summit of each tumor infiltrated with a one-tenth-of-one-per-cent. solution of eucain. After withdrawal of the anoscope, the clamp is introduced, the fenestrum opened, the hemorrhoid seized with forceps, brought into the opening, and the serrated blade locked. Another injection of eucain may be necessary. The tumor may be cut away and the edge cauterized or sutured if necessary. The author claims to have had excellent results from this method, with only slight annoyance to the patient.

Thrombosis of the Cavernous Sinus; Report of Four Cases, with One Cranial Operation.—The diagnosis of this condition has rarely been made. The literature includes 178 cases in addition to 4 cases reported by E. W. Dwight and H. H. Germain (Boston Med. & Surg. Jour., May 1, 1902). Most authors agree that the treatment is entirely preventive. Those who suggest operation usually speak only of drainage through the orbit. In the case operated on by Dwight the sinus was revealed by trephining the temporal bone; this same operation was performed a month later in a case described by Hartley and Knapp. These two cases are held to justify the belief that thrombosis of the sinus is distinctly an operable condition. Incision into one sinus apparently relieved instantly and completely the interference with circulation in both. The cranial operation is not associated with extreme difficulty; it can be done under almost primary anesthesia; it is not associated with any degree of shock, and it can be completed in a few minutes; the hemorrhage can be easily controlled.

Problems Relating to Surgery of the Stomach.—Thickening about a pyloric ulcer may be so great that even after incision, with the parts open to inspection, the operator cannot differentiate macroscopically a condition of cancer from one of ulcer. Enlarged lymphatic glands, writes W. J. Mayo (Boston Med. & Surg. Jour., May 1, 1902), unless distinctly cancerous, do not help; in a majority of diseases of the stomach marked by retention and fermentation, enlarged glands are present in the omenta. In many cases of chronic dilatation the surgeon cannot find an adequate cause. Pyloric spasm is theoretically predicated. Under anesthesia, if the normal pyloric opening be compressed between the thumb and finger, invaginated into the stomach and duodenal walls, on either side, the lumen will permit of easy meeting of the opposing digits, and gives the feeling that an opening exists about the size of a silver three-cent piece. In neurotic cases there may be an accompanying dilatation, usually of the atonic variety, without thickening of the wall. On surgical exploration such a stomach is usually found contracted and empty, although previous examination has shown it to be dilated. Surgical indications are dilatation with retardation of the passage of food. The demand for operation is a personal equation between the experience of the surgeon and the disability of the patient. Cases of ulcer fall into two groups, those at the pylorus with dilatation and those without dilatation. In the former class drainage of the stomach is the more satisfactory. Ulcers in a non-dilated stomach should if possible be excised. In fifteen cases of Heineke-Mikulicz pyloroplasty, relief resulted in eleven. In four cases the plastic operation enlarged the caliber of the pylorus, but the degenerated muscle of the stomach-wall was unable to elevate the food from the gastric pouch to the high-lying pylorus; secondary gastro-enterostomy was of necessity performed. Pyloroplasty has a limited field of usefulness in cases in which dilatation is not marked. All in all, gastro-enterostomy is more satisfactory, but in cancer the palliation is of such short duration that the operation is hardly justifiable. In benign conditions gastro-enterostomy has the advantage of draining the stomach from the lowest point, relieving the retention of obstruction as well as the painful contact which the food causes in gastric ulcer. In Mayo's judgment, the results after suture and those after the use of the Murphy button are about the same. There is little choice beween the anterior and the posterior wall. The main thing in gastro-enterostomy is that the opening be low down near the greater curvature. Chulmski's experiments showed that union was firm after the fifth day; in two of Mayo's cases, however, the bowel became detached from the stomach, once on the seventh and once on the tenth day.

Simple Blood-Count in Diagnosis.—The various methods of counting the blood-cells which seek to distinguish various kinds of the white and of the red cells are of undoubted and enormous value in diagnosis, but the difficulty is that the ordinary practitioner has often neither apparatus, chemicals nor time necessary for the procedure. The value of the simple enumeration of the white cells in appendicitis has recently been stated by H. Curschmann (La Sem. Méd., 1902, No. 16), with the following general conclusions: The simple counting of the white cells constitutes a sure and practical method of determining the existence of suppuration. In cases of this disease without pus, the white globules are increased in number; or the number is slightly increased at the very outset of the affection and rapidly returns to the normal. If there be no return to normal an abscess exists. After the evacuation of such abscess, the number of white globules returns to the normal. On the whole the observer thinks that this means of diagnosis is much more valuable than that of the thermometer, because the temperature curve may vary infinitely and because an extensive suppuration may be present without fever, while a blood-count would certainly show a large increase in the number of white cells. Other observers. H. Kruettner, in the field of surgery, and Max Deutzmann, in the field of gynecology, have recently made observations which tend to confirm precisely these views of Curschmann.

Surgery of the Heart.—In the diagnosis of penetrating wounds of the heart the main symptoms and signs are those produced by hemorrhage and less important are those due to shock. H. L. Nietert (Phil. Med. Jour., May 3, 1902) classifies the signs of heart wounds under three headings: (1) Those which indicate internal hemorrhage into the pleural cavity; (2) those produced by hemorrhage to the exterior; (3) those which are due to hemorrhage into the pericardium alone. The conditions that may confound the diagnosis are injuries to the large thoracic vessels. The author believes that all wounds of the chest causing a dangerous hemorrhage should be explored to the bottom. In approaching the heart the extra- or intrapleural method may be pursued. The writer has devised an operation for the first method, which consists of the making of a flap including the sternum from the level of the third rib to the ensiform, cutting the costal cartilages of the fourth, fifth and sixth ribs on the left side, and breaking those on the right when the flap is loosened and turned over. If the pleura be injured the intrapleural method may be employed. In the case reported by the author, the patient presented a penetrating stab wound which involved the left ventricle. Two interrupted silk sutures stopped the hemorrhage completely. A gauze drain was placed in the pericardium and one in the pleural cavity, both being removed on the fourth day. An empyema of the left chest developed a few weeks later, for which thorectomy was done. The patient made an uninterrupted recovery. Conclusions to be drawn from a study of the subject are as follows: Gentle manipulation of the heart may be done without producing shock; the introduction of sutures produces only slight irregularity of the heart's action; heart wounds heal rapidly and suturing should be done in all cases in which there is danger of fatal hemorrhage; the extrapleural route is best for cases free from pleural involvement; the intrapleural is to be preferred if the pleura has been injured.

Sarcoma Treated by the Injection Method.—A very interesting case of a sarcoma rapidly involving one side of the upper jaw, secondary to an injury and forming metastatic growths on the other side of the neck, is reported as being successfully treated by Coley's method of injection. O. K. Winberg (Med. Rec., May 3, 1902) states that a radical operation had been done, but that the growth was too large to be entirely extirpated. The patient grew rapidly worse and finally became thoroughly jaundiced, pulse 130 to 140, irregular and intermittent, the growth becoming so large that for several days nourishment could not be taken by mouth. In desperation an injection of one-half a minim was begun and gradually increased, although the patient grew worse during the first few days and death was daily expected. Later a change for the better was noticed and from that time on gradual but decided improvement was seen. Within a month the patient was able to be out and to attend to professional duties and in four months all evidences of the growths, except the external scars, had disappeared. The tumor was pronounced sarcoma by Drs. B. H. Huxton, Jas. Ewing and W. H. Welch, who examined it microscopically.

Treatment of Cholelithiasis.—The rational treatment of gall-bladder affections depends upon a proper appreciation of the pathological conditions. A. A. Berg (Med. Rec., May 3, 1902) points out that gall-stones are usually formed as a result of the presence of a low grade catarrh of the mucous membrane and that the severity of the attack depends largely upon the character of the infection. Cholecystitic pains or attacks of biliary colic unattended by fever may be treated medically, for they are not dangerous to life and frequently subside when the stone has passed or when the inflammatory condition of the bladder has ceased. He believes that after one attack the gall-bladder is always predisposed to further inflammatory conditions on account of the changes in the mucous membrane. After one or two attacks an internal operation is indicated; the mortality is only 2 to 3 per cent. If acute cholecystitis has been present, associated with fever, operation is always preferable, for the danger is considerable and the liability to recurrence is great. He states that the reason why constitutional symptoms do not correspond so closely to the severity of the local trouble as they do in appendicitis is because the wall of the gall-bladder is more elastic than that of the appendix and the tension and resorption are never so marked. Immediate operation during acute attacks in patients who are septic is attended by a mortality of 50 to 75 per cent.

Resection of the Cervical Sympathetic in Basedow's Disease.—Leaving out of consideration the causes of exophthalmic goiter, whether they are dependent on direct or reflex stimulation of the sympathetic nerve in the neck, or are the expression of a neurosis, a lesion, a compression or an intoxication, Belacescu (Archiv f. klinische Chirurgie, Apr., 1902) sets out to determine to what extent the cervical sympathetic plays a rôle in the production of Basedow's disease. Each of the principal and subsidiary symptoms may be shown to have some connection with an irritation of the cervical sympathetic. Exophthalmos, one of the most prominent symptoms, is believed by most authors to be dependent upon a stimulation of the cervical sympathetic, leading to an energetic contraction of the muscular cone, known as Müller's smooth muscle, at the posterior pole of the bulb. If this be true, section of the sympathetic would prevent the exophthalmos, which it does in all cases. The enlargement of the thyroid depends on an enormous dilatation of the vessels of the latter, which in turn is dependent on a stimulation of the vasodilator fibers of the neck and chest. The activity of the vasoconstrictor fibers is inhibited and the dilatation of the arteries causes hypertrophy of the gland. The theory of Jonnesco is that the struma of Basedow's disease is dependent on the increased activity of the thyroid elements and hypersecretion of the gland, which are dependent in turn on the permanent stimulation of the secretory fibers of the thyroid. Whichever of these theories is correct, the resection of the cervical sympathetic causing section of the vasodilator, vasoconstrictor and secretory fibers, results in atrophy of the goiter. This in fact occurs in every case. Tachycardia is likewise to be attributed to irritation of the cervical sympathetic. The accessory symptoms seem to be dependent on changes in the circulation of the brain brought about by stimulation of the cervical sympathetic. These symptoms, consisting of tremor, sensations of heat, sweats, gastro-intestinal disturbances, and the nervous excitability so frequently seen in this disease, are, according to Jonnesco, dependent on a permanent cerebral anemia produced by a continuous stimulation of the vasoconstrictor fibers of the cervical sympathetic going to the brain. Extirpation of these fibers leads to cerebral congestion. The various operations on the cervical sympathetic for the relief of exophthalmic goiter are the following: (1) Simple division of the cervical sympathetic; (2) ablation of the cervical sympathetic by means of Jaboulay's operation, which, without a large incision, is devised to stretch and twist the nerve by means of artery forceps attached to its upper and lower ends; (3) simple stretching of the cervical sympathetic; (4) partial resection of the latter; (5) partial and extensive resection; and (6) total resection. Considering the results of the large number of operative precedures for the cure of primary Basedow's disease, the author concludes that total and bilateral resection of the cervical sympathetic, which is known as Jonnesco's operation, is the most effective. The mere stretching and even the simple division of the nerve do not destroy all the connections of the sympathetic with the thyroid. The partial and extensive resection is applicable in only those cases in which the tachycardia is not pronounced. Although the direct surgical treatment of simple goiter by means of the almost total resection of the thyroid gland is not in itself a dangerous operation, in the struma of Basedow's disease it is very serious and is accompanied by many disadvantages.

Bile-Duct Surgery.—In a contribution to the surgical treatment of obstruction in the common bile-duct by concretion, A. W. M. Robson (Lancet, April 12, 1902) gives the details of the operative treatment as follows: A firm sand-bag is put on the back opposite the liver, pushing the spine, the liver and the common bile-duct well forward and acting like the Trendelenburg position by causing the viscera to fall away downward from the field of operation. A vertical incision is made over the middle of the right rectus, the fibers of which are separated by the finger, and the gall-bladder and the ducts are expeditiously and effectively exposed. When it is necessary to open either the common duct or the deeper part of the cystic duct, instead of prolonging the incision downward, it is carried upward into the space between the ensiform cartilage and the right free border of the ribs, thus exposing the upper surface of the liver. It will then be found that by drawing the liver upward toward the front of the body, or at first downward, if necessary, away from the diaphragm and ribs, the whole of the common duct is brought quite close to the surface with the gall-bladder. The gall-bladder is usually sufficiently strong to bear traction and the assistant can grasp it with his fingers or with forceps, and by general traction can keep the parts well exposed and, at the same time, by means of his left hand with a sponge beneath it, he can retract the wound of the viscera. It will now be observed that, instead of the gall-bladder and the cystic duct forming an angle with the common duct, an almost straight passage is found from the opening into the gall-bladder to the entrance of the bile-duct into the duodenum. If the adhesions have been thoroughly separated, the surgeon will have immediately under his eye the whole length of the ducts with the pancreas and duodenum. So complete is the exposure with this method that the peritoneum can be incised and the common duct separated from the structures in the free border of the lesser omentum, but this is not necessary except in cases in which the growth must be removed. The surgeon, with both hands free, can now with his left finger and thumb so manipulate the common duct as to render prominent any stones, which can then be removed by cutting down upon them and turning them out. A considerable protection against a flux of bile must be made with sponges. It is well to pack one into a pouch near a kidney and further have the assistant mop up the bile as rapidly as it flows out. Exploration of the hepatic duct must also be made with the fingers behind the duodenum. Drainage of the wound had best be carried out through a stab wound in the loin.

Resection of the Knee.—In the treatment of tuberculous inflammation of the knee two methods are available—the operative and the non-operative. W. Sykow (Ctlblt. f. Chir., 1902, No. 15) carried out the following procedure in a case of resection: In order to replace the removed joint, he obtained a piece from the lower third of a thigh bone so sawn that only the rear wall remained behind. In this way a half-ring of bone was obtained which was placed between the thigh bone and the tibia and plastically covered the periosteum from above, thus replacing in part the joint removed. This ingenious procedure succeeded well and finally gave a limb that was much less shorter than would otherwise have been the case.

Carcinoma of Hepatic Flexure of Colon.—Cases in which there is a palpable tumor mass in the right hypochondrium ordinarily present to the surgeon a diagnostic problem of no mean difficulty; the gall-bladder, liver, pylorus, duodenum, kidney, and even other structures, must each be considered. Cases in which no such mass presents are proportionally more puzzling; the most important points in their diagnosis are summed up by Maylard (Edinburgh Med Jour., May, 1902) as follows: Most suggestive is the prominence of gastric derangements, in association with these symptoms, peculiarly indicative of colon disease. The order in which these two sets of symptoms appear and their relative importance in the clinical picture depend on the mode of growth of the tumor. If it does not tend to occlude the lumen of the colon, from which it springs, but grows outward, compressing neighboring structures, especially the duodenum, the presence of colon disease may remain entirely unsuspected. In such cases all the symptoms arise from compression of the duodenum and are practically those of pyloric obstruction. Again, there may be simply the general signs of an obstruction of the large gut, with no complicating features; such cases baffle a definite localization. If, however, as is generally the case, the tumor tend first to occlude the corresponding portion of colon and then to exercise secondary compression on the duodenum, a very distinctive and typical syndrome supervenes. There are first the symptoms of hepatic flexure obstruction. These are usually more acute than those connected with obstruction and more distally situated. The pain is more frequently present than when the disease is in other parts of the colon; it is more acute, and it is usually felt over the seat of disease. Constitutional symptoms, moreover, generally occur very early. If to this set of symptoms, dilatation of the stomach, retention, etc., be superadded, the diagnosis becomes almost positive.

MEDICINE.

Primary Carcinoma of Liver.—On March 8, 1901, a patient of H. D. Jump and J. D. Steele (Proc. Phila. Path. Society, Mch., 1902) had a mild attack of biliary colic and one week later a similar attack occurred. She then became weak and depressed and there was constant distress in the right hypochondrium. There was no jaundice, no increase of liver dulness, and the gall-bladder was not felt. Six weeks later the liver was palpable, and it continued to grow till it reached nearly to the crest of the ilium. It was uniformly enlarged and tender and its surface was nodular. She died in coma three months after the first attack of biliary colic, never having become jaundiced. The gall-bladder was filled with large gall-stones, and neither it nor its ducts were the seat of malignant disease. The liver was tremendously infiltrated with nodules of true glandular cancer. No growth was found in any other organ.

Blood-counts in the Newborn.—The results of three hundred counts in forty-three different infants are summarized as follows by John Aitken (Jour. of Obst. and Gyn., Brit. Empire, Apr., 1902): (1) The red corpuscles at birth are relatively more numerous than in the adult. During the first forty-eight hours of life the number per c.mm. increases, owing to concentration of the blood (from loss of fluid by urine, perspiration, etc., and fasting). The child loses weight during this period. From the second day, as a rule, a gradual fall in number takes place, so that by the tenth day these are less than at birth (200,000-400,000 per c.mm.) The child gains weight during this period. During the early days the blood shows variation in size and shape of the red blood-corpuscles, and deficiency in rouleaux formation. Nucleated reds—normo- and megablasts—are present at birth in greatly varying numbers. They are found as late as the ninth day. (2) The hemoglobin is relatively high at birth and during the few succeeding days is usually over 100 per cent., the individual cells being richer than those of the adult. (3) The leucocytes, which at birth are two or three times as numerous per c.mm. as in the adult, increase during the first two days because of changes in digestion and in volume of the blood. After this, the number diminishes, and by the tenth day, it is down to 4-6,000. Digestion leucocytosis is very marked, especially after the first feedings, and when a fast has preceded feeding in later days.

Tuberculin in Diagnosis.—From a study of 100 cases in which this agent was employed as a diagnostic measure, C. M. Wood (Jour. Amer. Med. Assoc., Apr. 19, 1902) has formulated the following requirements for the reaction: (1) The rise in temperature must amount to at least two degrees; (2) it must reach its height between six and twenty-four hours after the injection, except in fibroid cases, in which it may be delayed to thirty-six hours; (3) it must be accompanied by at least two of the following symptoms: Chilliness, nausea, headache, muscular pains. Of these cases, 41 gave the reaction, of which 36 were later proven undoubted tuberculosis; 3 were syphilitic, and 2 profoundly neurotic. Active syphilis must always be definitely excluded. Of the 59 cases which failed to give the reaction, only one subsequently showed evidence of tuberculosis. The author concludes that tuberculin in doses of .005, carefully increased when necessary to .010, produced no bad effects in simple or complicated tuberculous or non-tuberculous cases. The characteristic reaction usually occurs about the eighteenth hour and is accompanied by chilliness, headache, nausea, or muscular pain. The tuberculin test ranks in value with the Widal typhoid test, and since in the former the technic is simpler, the materials are more readily obtainable and more permanent, the danger is no greater and the information obtained is scarcely less reliable.

Transmission of Yellow Fever.—From an extensive study of available historical documents C. Finlay (Jour. Amer. Med. Assoc., Apr. 19, 1902) finds that it is possible to trace an agreement between the history of yellow fever and its transmission by the *Culex* mosquito. The transportation of these insects in sailing vessels appears to have been of frequent occurrence and to this must be attributed the coincidence of the severe epidemics noted in widely-separated places even in early days. Healthy mosquitoes were probably also frequently imported into subtropical countries, as in Italy, southern Spain and the coasts of the Mediterranean, as well as in the southern United States. The previous existence, therefore, of the yellow-fever mosquito must be considered *per se* to constitute a dangerous complication whenever a case of yellow fever happens to be introduced in a place previously free from that infection. The range of the Andes and its prolongation along the Isthmus of Panama and Central America have probably proved a barrier to the migration of the mosquitoes to the west coast of America. The opening of the interoceanic canals, however, may cause this obstacle to disappear to some extent. It is to be hoped that all the existing foci of the disease may be eradicated by that time.

Unusual Case of Leucemia.—A case which cannot be classified among the usual subdivisions of leucemia is reported by L. Michaelis (Zeitsch. f. klin. Med., Vol. 45, No. 1 and 2). The patient gave evidences of a disease of the blood-forming organs, leading to death within three months, without swelling of the lymph-nodes, but with large, soft spleen and red bone-marrow. Examination of the blood showed a few normoblasts, no leucocytosis, but considerable change in the relative proportion of the different leucocytes to each other, the large lymphocytes predominating, and as many as 7 per cent. of myelocytes being present. Without doubt the case belongs to the leucemic diseases, but the question is to which one. Against lymphatic leucemia speak the absence of lymphatic swellings and hemorrhagic diathesis, the presence of myelocytes in the blood and of marrow giant cells in the organs; yet the appearance of the smears did not suggest myelogenous leucemia. In the author's opinion not sufficient stress has been laid upon cases like this which give evidence of an intermediate type.

Strange Case of Pneumothorax.—In strong persons the development of a pneumothorax is usually marked by sudden collapse, severe dyspnea, feeble pulse and subnormal temperature; in the weak, especially those already suffering from dyspnea, the accumulation of air in the pleura may not aggravate the general condition until the disease is far advanced. A unique case is reported by G. Jochmann (Zeitsch. f. klin. Med., Vol. 45, No. 1 and 2). A young man came to the clinic with no other sign than slight pain over the chest, some palpitation of the heart and slight dyspnea on exertion. Physical examination and transillumination with the Roentgen rays revealed the presence of a large amount of air in one pleura, compressing the lung flat against the vertebræ and considerably displacing the heart. Under expectant treatment a cure rapidly set in and the lung began to expand, as could be seen by repeated X-ray examinations. The patient presented himself again soon after his discharge with the same symptoms and physical signs, but the second time the cure was complete. The usual causes of pneumothorax, such as trauma and tuberculosis, were absent and the presence of a pleuropulmonary fistula of unknown cause is assumed as origin.

Early Signs of Pleurisy.—The advances of the last twenty years in the treatment of disease have probably rested more upon improved diagnosis than upon any other single factor. The following contribution to the very early diagnosis of pleurisy with exudation is given by B. Przewalski (Ctlblt. f. Chir., 1902, No. 14). In a careful examination of the chest in patients with this disease, even in the earliest stages he has found in a considerable number (14 with serous and 5 with suppurative pleurisy, confirmed by exploratory puncture), without a single exception, a narrowing of the intercostal spaces and a very appreciable resistance over them on the affected side. This symptom can be observed most distinctly and easily in children; the narrowing of the intercostal space over the region of the exudate is very characteristic and finds its analogy in the contracture of muscles in the extremities so often seen when the joints are diseased. The reason why so constant and typical an anatomical symptom of exudative pleurisy has as yet been nowhere mentioned in the best known text-books for diagnosis is that the amount of motion in the ribs in many normal individuals is comparatively slight. This symptom seems to arise through the rigidity of the internal intercostal muscle. If this explanation of normal costal respiration be correct, it seems to rest upon a purely reflex phenomenon.

Achylia Gastrica.—The name achylia gastrica is a misnomer, according to L. Kuttner (Zeitsch. f. klin. Med., Vol. 45, No. 1 and 2), since though there may be no hydrochloric acid secreted, some pepsin and rennin is generally present and a parallelism between the three does not exist. As characteristics of the disease, the following points are given: (1) The stomach, examined in the morning before breakfast, is always empty except for small amounts of mucus. (2) Expression three-fourths to one hour after a test-breakfast gives evidence of a complete inactivity on the part of the digestive power of the stomach, as far as the solid ingredients are concerned. (3) The expressed fluid shows an acidity in the neighborhood of four. (4) Its power to digest albumin is slight. (5) The amount expressed is small. (6) Considerable vulnerability of the mucosa is manifested by the frequent presence of blood in the expressed fluid. The subjective symptoms are either absent or merely amount to disturbances of appetite and pain when the stomach is empty. In another class the symptoms are intestinal in the form of diarrhea and tympanites, or they are nervous and suggestive of hysteria or neurasthenia. An examination of the particles of mucous membrane found in the washings shows that there is always a proliferation of the interstitial tissue, often with destruction of the glands.

Pseudomeningitis.—The presence of a symptom-complex resembling meningitis, without the demonstrable lesions of this disease at a later autopsy, has sometimes been noted, especially during epidemics of influenza. An unusual case of this kind is reported by J. Donath (Deut. med. Woch., Apr. 17, 1902). The patient, a young man of eighteen, developed eleven days after an osteotomy for genuvalgum a sudden rise of temperature, severe cerebral symptoms, loss of consciousness, muscular spasm, retracted abdomen, etc., with death following on the third day. Fat embolus and uremia could be properly excluded and all the signs pointed to meningitis, possibly tuberculous. Autopsy showed some edema of the pia and surface of the brain, but no signs of any acute inflammatory changes. The influenza bacillus could be readily demonstrated in some of the lobules. The author calls attention to the diagnostic value of lumbar puncture in these cases, when ordinary means are of doubtful value.

Diagnosis of Pentosuria.—In certain cases the usual sugar tests can be elicited in the urine without there being present a true diabetes mellitus. The reaction is afforded by pentose and attention is called to the practical necessity of distinguishing its presence by M. Bial (Deut. med. Woch., Apr. 10, 1902). The latter has modified the so-called "orcin reaction" so as to make it more readily applicable for office tests. The reagent is made by adding 500 grams of fuming hydrochloric acid to one gram of orcin; to this 25 drops of a 10-per-cent. solution of ferris chloride are then added. Four or five c.c. of this solution are mixed with from 2 to 3 c.c. of urine and heated until bubbles are given off. A thick, green, flocculent precipitate indicates a positive reaction, the quantity depending on the amount of pentose present. The advantages of the method are its simplicity, ease of performance and reliability.

Pneumococcic Gastritis.—It needs little evidence now to convince the practitioner that almost all of the germs of infectious diseases are capable of attacking equally well any part of the system and causing a different clinical picture in accordance with the site of their invasion. A. G. R. Foulerton (Lancet, Apr. 12, 1902) reports a case of gastritis caused by the pneumococcus and followed by a general invasion through this same germ. The patient was twenty-six years old, and was admitted December 27th, with the following history: The fortnight previously he had had "quinsy" and had remained ill ever since; three days before admission he had a severe nose bleed which continued more or less persistently. On the day before admission he had eructations of dark-colored, foul-smelling fluid. On admission he was prostrated to an extreme degree. His lips were swollen and in the skin around them and on the cheeks were small spots of hemorrhage. There was coagulated blood in the nostrils, on the lips and on the gums by the teeth. The breath was very offensive and the tongue was dry and covered by a dark gray fur. The pulse was rapid, small and soft. On the 28th, bleeding from the nose continued and after a gradual sinking he died on the morning of the 30th with urgent dyspnea. It must be noted that throughout the illness there was neither pain in the stomach nor vomiting, nor for that matter anything to suggest disturbance of the stomach. This organ, however, after death was in a state of marked change. It contained a dark-colored fluid of offensive, cheesy smell, and was lined from end to end with a rough exudate almost black in color and firmly attached. Toward the pylorus it became more gray. There was considerable thickening in the wall. Elsewhere in the body were signs of general invasion and from most of the organs the pneumococcus was recovered.

Peritonitis and Empyema.—Inflammations of serous membranes are by no means confined to one locality. There may be pleurisy, pleuropericarditis, peritonitis or meningitis associated with pleurisy or pleuropneumonia. In these cases the double or triple lesion is undoubtedly due to the invasion by micro-organisms which have been carried from one organ to another by the blood or lymph-stream, or in some cases infection has occurred by direct contact. In septicemia of pneumococcus origin one may find pleuropneumonia, peritonitis and meningitis in the same subject, though in an early stage because death has resulted from toxemia before the lesions were far advanced. In other cases the streptococcus or the tubercle bacillus has been the organism causing the multiple inflammation. Such associated serous inflammations bear an analogy to the multiple joint inflammations, a circumstance which has probably suggested the names of "polyserositis" or "polyorrhomenitis." Cases of such multiple inflammations differ regarding the infection present and the organs attacked, and only confusion will result from including them under one name. H. Ashby (Lancet, Apr. 19, 1902) reports a case of purulent peritonitis associated with empyema followed by recovery. The girl was eight and one-half years old, delicate, subject to attacks of bronchitis, but was in fair health up to September 10, 1901, when she was suddenly seized with vomiting, diarrhea and abdominal pain; the next day her temperature was 103° F., and there were incessant vomiting, foul, liquid stools, cough and mucous expectoration. The vomiting ceased in a few days, but the diarrhea continued for a week, with a temperature of 103 to 104° F.; there was also great pain in the abdomen and left chest. Jaundice was evident. On examination September 21st, she showed tenderness in the abdomen and severe paroxysmal pain, general tympanites; signs of consolidation in the left chest over the lower two-thirds of the lung behind, with bronchial breathing and consonating râles; pneumonia at the base of the right lung; rapid respiration; temperature

101° F.; pulse 140. On the whole, she was in good general condition, considering the severity of the disease. Signs of fluid soon developed in the abdomen and in the chest, and a large amount of pus was evacuated. That removed from the abdomen contained the micrococcus tetragenus, and that from the chest the pneumococcus. The patient eventually recovered.

Prognosis in Typhoid.—A peculiar symptom which was suggested by Professor Trousseau many years ago as being of value in determining the prognosis in typhoid fever is brought to notice by W. C. DOANE (N. Y. Med. Jour., Apr. 26, 1902), who has confirmed its significance in many cases. When deafness is present only on one side the prognosis ought to be guarded, for the patient almost always dies, although the disease at that time may appear very mild. If the deafness occur on both sides, however, the prognosis is good, for it is said that persons are almost never seen to die when this symptom is present. No explanation for this unusual phenomenon is offered, but its value may be learned by experience.

Gonorrheal Rheumatism.—There is considerable diversity of opinion in regard to the etiology of this disease, some writers claiming that it is a toxemic effect of the gonococcus upon the general system, either by its presence in the circulation or by that of the toxins of this organism. They also claim that the synovitis has no relation to rheumatism. J. D. WESTERVELT (Med. Rec., May 3, 1902) believes that the disease is really a mixed infection in which rheumatism plays an important part and must engage one's attention in the treatment. It usually comes on late in gonorrheal attack and has no symptoms of a septicemic or pyemic affection. The urethral discharge must be treated, but besides that the rheumatic element and the general condition of the patient demand attention. He places much dependence on the internal administration of cod-liver oil with five grains of potassium iodide in each tablespoonful given four times a day. The latter, by its eliminating properties, removes the cause of the pains and increases the flow of urine and uric acid. The oil tones up the nervous system and improves the general nutrition.

Caisson Disease.—A partial recognition of some of the causes of this interesting modern malady has done much to decrease its frequency. A. H. MUIR MACMORRAN (Brit. Med. Jour., Apr. 26, 1902) cites a series of cases which developed in the recent building of the Greenwich footway tunnel. One of the chief reasons why there is less caisson disease than formerly is that in most instances the men are now subjected to a very careful and searching medical examination. The total percentage of rejections made by himself and his colleagues of applicants for permission to work underground was 18.8. The most important grounds for rejection are a high-tension pulse, booming heart sounds or reduplication of the second sound. This supervision is the first means of combating caisson disease. The second consists in reducing the CO_2 as far as possible. This was accomplished by the introduction of a blow-off tube in the shield and by injecting the air through screens of caustic soda. Macmorran believes the theory of hyperemia has been set aside by many on altogether insufficient grounds. He thinks that the true explanation of caisson disease lies in the combining of the two factors most frequently discussed in connection with it, namely, hyperemia of the deeper tissues and accumulated impurities in the blood, due to imperfect interchange of gases in the lungs. Nerve sedatives are to be preferred to opiates in the treatment of caisson disease, and in severe cases cannabis indica often gives excellent results. The nitrates and acetates of potassium are useful in the termination of the trouble, but by far the most important part of the treatment is the medical lock into which air passed over caustic soda is pumped till the pain subsides. Caisson disease will become a thing of the past if only suitable men be employed and if the suggested treatment be given to the injected air.

GENITO-URINARY AND SKIN DISEASES.

Pyuria.—When pus appears in the urine, its source may be the kidney, or the bladder, or other parts of the tract. The determination of what is the primary origin of the pus is a very important question. G. ROSENFELD (La Sem. Méd., March 26, 1902) gives the following points: If the urine be acid, it is more apt to come from the kidney than if it be alkaline, with the exceptions of some of the conditions of the bladder, like tuberculous cystitis and uric-acid calculi, when it may remain acid. The white blood-cells which are found in the urine are round or normal in shape if they come from the bladder, but much altered and crenated if from the kidney. Certain tumors of the bladder may also give altered white blood-cells. Epithelial cells may also aid in the diagnosis, but as a matter of fact are not as important as formally supposed. Rosenfeld claims that the greatest differential point is the quantity of albumin in the urine after it has been allowed to settle. If the pus proceed from the bladder, the albumin is low, about 1½ per cent. If from the kidney it is much more apt to be high, about 3 per cent. or more. The reason is that the kidney which is the seat of purulent infection is almost certain to secrete albuminous urine.

Urethral Stricture.—Circular electrolysis is the best method of treating urethral stricture, according to KHOLTSOFF (Russki Vratch, N. 5, 1902). He uses slightly modified Newman's instruments and gives to his patients one to five seances of about ten minutes' duration at intervals of a couple of months. The method has been employed in gonorrheal as well as traumatic strictures with uniformly good results. This treatment dates back only two years, consequently he cannot as yet judge about the final results.

The Vibratile Sound.—The favorable results obtained by the lately-devised vibration treatment have led LASKOWSKI (Deut. med. Woch., Apr. 3, 1901) to apply the method to certain lesions of the urinary tract. He uses an ordinary curved sound to the broad end of which a form of clock-spring is firmly attached. The vibrations are generated by striking the spring with a short leather-covered stick at definite intervals. A size of sound is selected which will produce a slight stretching of the urethral walls. The best effects have been secured by its use in disturbances of the nerves and musculature of the urethra, incontinence, residual urine, sexual neurasthenia. Phosphaturia and prostatorrhea were also benefited. The only contraindications are acute inflammations and the presence of the gonococcus.

Atoxyl, a New Arsenic Preparation; Its Use in Skin Diseases.—Atoxyl is a white odorless powder containing about 37 per cent. and soluble in five parts of warm water. Before attempting its use in practice, W. SCHILD (Berl. klin. Woch., Mch. 31, 1902) studied the toxic effect of the drug in animals and found its toxicity to be only one-fortieth that of the quantity of arsenic which it contains. Hence, it affords a means of introducing into the system a larger volume of arsenic than can be introduced safely by any other means. Small doses by mouth readily produce gastric disturbance. Hence, Schild soon decided to administer the drug only by hypodermatic injection. Beginning with 0.04 gram of a 20 per cent. solution, the dose is gradually increased until it reaches 0.2 gram, at which point it remains during the remainder of the period of treatment. Temporary discontinuance of treatment is occasionally necessitated by the appearance of chills, dizziness and headache.

Favorable results were obtained by Schild in cases of psoriasis, lichen ruber and other chronic dermatoses. While atoxyl will not effect a complete cure of psoriasis unaided by external treatment, neither will other forms of arsenic. It, however, materially aids and quickens the action of external treatment. In fourteen cases of lichen ruber treated exclusively by atoxyl injections complete cures were obtained without a single exception. The average duration of the period of treatment in these cases was fifty days.

Ultraviolet Rays in Skin Diseases.—The ultraviolet rays may be recognized by the following properties: (*a*) They are powerfully actinic. (*b*) They can excite fluorescence. (*c*) They can discharge an electrified body provided the body is negatively electrified. (*d*) They have a special action on the skin of the higher animals and on the entire tissues of the lower animals and plants. (*e*) They can produce nuclei for cloud condensation in moist air. Dawson Turner (Brit. Med. Jour., Mch. 22, 1902) describes some experiments he has made with these rays and the form of apparatus which he has found most convenient and practical for their therapeutic employment. He finds that the spark-gap radiation from a condenser is more powerfully actinic than that from an arc light. The chief difficulty in dealing with these rays, however, is the fact that glass is impenetrable to the extreme and most potent part of the ultraviolet rays, hence, the refraction prisms used must be composed of something other than glass. Ice, quartz, pure water, grape sugar and gypsum all offer less obstruction to the rays than does glass, but pure rock salt proved to be the most easily permeable substance found. It has this disadvantage, however, that in the presence of moist air a film of moisture collects on the surface of the salt prism and seriously interferes with the refraction. One great advantage of the spark gap of a condenser over the arc light is that its heat radiation is practically *nil;* it can, on account of this, be brought to within an inch or less of the patient's body. Rodent ulcers treated with this form of apparatus after failing to respond to the X-ray have been cured in three sittings.

Urotropin in Urinary Infections.—Tests of the inhibitary and germicidal powers of urotropin with cultures of staphylococci, B. coli, and B. typhosus, have been made by J. O. Symes (Bristol Med.-chir. Jour., Mch., 1902). He found that these cultures when mixed with an acid urine with urotropin in solution, 1 to 1,000, showed an inhibited growth. The bactericidal power was most marked with B. typhosus. Alkaline urine decreases this property. The action of urotropin is not well marked in pyelitis or pyelonephritis, because the organisms are deeply embedded in the tissues and the urine is often alkaline. The best results are seen in cases of cystitis secondary to enlargement of the prostate, because the bladder-walls are not deeply penetrated and the urine on leaving the kidney is acid. In gonorrheal cystitis, symptoms were relieved, but it was possible to detect the diplococcus even in the acid urine. Cystitis due to B. coli, often seen in women, does not yield readily to urotropin, as this organism appears to be peculiarly resistant to the drug.

Nature of Prostatic Hypertrophy.—For many years it has been the consensus of opinion that a true tumor formation was present in the prostatic hypertrophy of the aged and that the prostatitis associated with urethritis in young men was another affair. During the past few years, however, several investigators have shown that the purely myomatous or fibrous form of prostatic hypertrophy is extremely rare and that a chronic inflammatory process is the main etiological factor in this condition. From the histological study of a large number of specimens, R. H. Greene and H. Brooks (Jour. Am. Med. Jour., Apr. 26, 1902) find marked confirmation of the latter idea. In a series of 58 cases studied, all showed evident inflammatory lesions. In 41 the increase in size was entirely or chiefly due to fibrous proliferation, but in 36 inflammatory infiltration played a leading or contributory rôle, and in 191 cystic distention of the alveoli was present in sufficient degree to increase notably the size. Six tumors were present, 3 fibroid and 3 carcinomatous. It is generally recognized that interstitial hyperplasia after adolescence is the result of inflammatory disease. In the young this process may cease after removal of the cause and retraction and atrophy follow from sclerosis of the fibers, but in the middle-aged or old man resolution does not readily follow and the condition becomes chronic, with increased fibrosis, thickening of the vessel-walls and chronic congestion. To this, secondary changes may be added and prostatic hypertrophy results. As for the origin of this inflammation the authors believe it to be due to a chronic posterior urethritis of whatever cause. They also conclude that the rare prostatic neoplasms are not concerned in the production of true prostatic hypertrophy, but that carcinoma may occur in the hypertrophied prostate as a result of the chronic inflammatory process.

The Justus Test for Syphilis.—The claim has been made that the hemoglobin estimate taken twenty-four hours after the injection of or inunction with mercury showed a drop of from 10 to 20 per cent. and that the test was found only in syphilis and held good before the advent of secondary symptoms. Several contributions to the discussion of this subject have lately been made. Tucker (Phil. Med. Jour., May 10, 1902) finds that the Justus test has no practical value in the differential diagnosis of venereal ulcers, since the reaction occurs with an almost equal degree of frequency in the non-syphilitic conditions with which syphilis may occasionally be confused. The summary of his cases, with the percentages of positive results, is as follows: 13 cases of the initial lesion with 38 per cent.; 7 of chancroid with 57 per cent.; 3 of herpes with 100 per cent.; 3 of genito-urinary tuberculosis with 33 per cent.; 1 of pustulo-crustaceous syphilide with 0 per cent. A similar conclusion is reached by W. E. Huger, who finds in 6 cases of chancre a positive reaction in 50 per cent.; in 3 of chancroid, 50 per cent.; in 4 of chancres with secondaries, 50 per cent.; in 3 control cases, 0 per cent.

PATHOLOGY AND BACTERIOLOGY.

Bacteriology of Erysipelas.—In connection with the much-discussed etiology of this disease, G. E. Pfahler (Phil. Med. Jour., Apr. 19, 1902) reports the results of his investigations in a series of 98 cases. In 86 of these certain diplococci were found which he submitted to the usual culture tests and describes specifically as spherical cocci, usually occurring in pairs, within or without the leucocytes, and at times apparently encapsulated. This diplococcus stains readily by aniline gentian-violet, by carbol-fuchsin, and by Gram's method. It is aerobic and grows best at 31° C. It is non-motile. Glycerin-agar shows minute opaque colonies in twenty-four hours, blood-serum a more luxuriant growth. Gelatin is not liquefied; no growth upon potato. Bouillon cultures injected into rabbits produced distinct erysipelatous inflammations from which the identical diplococcus could be isolated. The author believes that this coccus is the most common cause of erysipelas or of a disease which cannot at present be differentiated from it. Koch's postulates have been demonstrated with reference to the organism.

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No. 111 FIFTH AVENUE, NEW YORK.

Subscription Price, including postage in U. S. and Canada

PER ANNUM IN ADVANCE	$4.00
SINGLE COPIES	.10
WITH THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, PER ANNUM	8.00

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LEA BROTHERS & CO.,
No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK.

SATURDAY, MAY 31, 1902.

SUICIDE AND INSANITY.

THE prevalent notion that suicide is always an insane act is erroneous; no act by itself alone is evidence of sanity or insanity. In non-suicidal races suicide is strong presumptive evidence of insanity. In very suicidal races it is no evidence either way. Indeed, under certain conditions it may be an evidence of sanity. There is in India a caste of carriers who are noted for the care taken of articles intrusted to them. If one be attacked by robbers he solemnly tells them that he will kill himself. Whereupon, on their persistence, he kills himself and the caste of carriers is bound to hunt down and destroy the robbers and their families. Under the army system soldiers often commit legal suicide by killing an innocent child who is sure to go to heaven and thereby compelling the law to execute them, giving time for religious consolation. Homicide for suicide purposes has lately occurred in Bavaria. In the early part of May, 1902, a tailor of Munich was convicted of murdering the ten-year-old daughter of a neighbor and was given fifteen years at hard labor. The tailor, having been jilted, determined on suicide, but, believing that suicides do not enter heaven, he decided to commit murder so that he might have religious consolation before being executed. He first determined to murder his sweetheart, but was deterred by the fear that he would endanger her hereafter by sending her to her doom unprepared. He then decided to kill an innocent child who was sure of heaven. He was placed under observation in an insane hospital, but the physicians declared that he was sane. He was thereupon tried and intentionally convicted of manslaughter by the court so that he should receive a penitentiary sentence in place of the capital sentence which he desired.

Homicides of this kind are far more frequent than is usually suspected.

The suicide-rate in European armies far exceeds the rate of the country to which the army belongs. The German army has a suicide-rate of 670 per million; the Italian army, 400; the Belgic, 240; the English, 230; the English-Indian, 480; the Russian, 200; the Spanish, 140. The English-Indian rate is due to the depressed and suspicional states produced by moist heat. The suicide-rate of the French Army of the Interior fell from 470 under the Empire to 290 under the Republic. The African army of France has a rate of 630 per million, probably from causes similar to those affecting the English-Indian army. The increase of suicide among Americans in the Philippines is in the same direction. The United States suicide-rate is double that of the Irish and about one-half that of the English.

A large number of cases of accidental death among the insane are charged to suicide when in reality a fatal accident occurred in an attempt to escape from fancied peril. The most determined of insane suicides are those affected by melancholia, especially the cases which exhibit only emotional depression and are regarded as perfectly sane. Some of the early Christian sects compelled suicide by outraging the religious sense of the polytheists to secure the crown of martyrdom. Less than a decade ago two Russian sects buried voluntary victims of sacrifice until the Government interfered. These sacrifices were atonements for the sins of the world. A very similar case was that of an Italian paranoiac who deliberately set about the manufacture of a cross and all the necessaries for crucifixion. Perceiving it would be difficult to nail himself firmly to the cross he made a net which he fastened over it. Securing it at the bottom of the upright beam a little below the bracket he adjusted it for his feet and at the ends for his two arms. The whole apparatus was tied by two ropes, one from the net and the other from the place where the beams intersected each other. The ropes fastened to the bar above the window were just long enough to permit the cross to lie horizontally on the floor of the room. These preparations finished he put on his crown of thorns, some of which entered his forehead. Stripping himself naked he girded his loins with a white handkerchief. Then he introduced himself into the net and seating himself on the cross drove a nail into his right palm by striking its head on the floor until the point appeared on the other side. He placed his feet on the bracket and with a mallet drove a nail through each of them, and thus fastened them to the wood. He then tied himself to the cross by a piece of cord around his waist, after which he wounded himself with his shoemaker's knife in the left side, but failed to injure any important organ. He had made several scratches on his breast to determine the place of least resistance. The knife represented the spear of the crucifixion. This was done in his room. In order to show himself to the people he placed the foot of the cross upon the window sill, which was very low, and by pressing his fingers against the floor he gradually drew himself forward until, the foot of the cross overbalancing the head, the whole machine tilted out of the window and hung by two ropes fastened to the beam. He then nailed his right hand to the arm of the cross, but could not succeed in fixing the left, although the nail by which it was to be fixed was driven through until half of it came out on the other side. After hanging thus an hour he was noticed, detached from the cross and put to bed. He recovered from the wounds, but his mental state remained morose, tactiturn, and solitary.

While suicidal tendencies in children are far from infrequent, suicidal acts are rare. This is due to the mobility of the child temperament. The exciting cause of the suicide is usually trivial. One boy in Germany killed himself to get rid of "so much dressing and undressing." With the increasing social tendency to expose children to financial and other mental stress at the critical period antecedent to puberty, suicide, insanity and criminality must, as Kiernan remarked a decade ago (*Medical Standard,* Vol. XII., p. 62), in the nature of things increase. Sanitarians should pay a little more attention to the labor demanded from children. It is a disgrace to American civilization that the almighty-dollar Moloch should require so many infantile sacrifices.

BEEF-JUICE IN INFANT-FEEDING.

Much has been recently said of the evils of feeding beef-juice to children during infancy. There is good reason to think that during the period of literal infancy, that is, the non-speaking first two years, beef-juice is not to be employed as a regular article of diet, unless especially indicated. There seems no doubt, however, that at times its employment is not only justifiable, but entirely in accord with rational thought in the etiological treatment of infantile affections.

Of late years we have become familiar once more with scorbutic affections in children. It was thought that with our greater attention to dietary regulation, such ailments would not occur unless very exceptionally in our modern life. In these cases beef-juice has appeared to many specialists in children's diseases to supply most suitably the salts whose deficiency in the child's previous diet gave rise to the scorbutic symptoms. Its employment is much more consonant with the idea of treating the child through modifications of its food than by the use of remedial measures of other kinds. Even the vegetable and fruit acids must be considered somewhat in the light of chemical remedies for a condition the exact origin of which is unknown, and whose chemism is at best not completely understood.

Perhaps no more startling bit of information has ever been furnished the medical world than the announcement during the preceding generation that the much-prized bouillon and beef-tea of our forefathers was a good stimulant, but not a nutrient. It had often been said that a pint of beef-tea contained almost the entire nutritive qualities of a pound or more of beef. The introduction of extract of beef seemed to furnish concentrated food in eminently palatable and digestible form. Travelers and explorers carried it with them with this idea and they were not disappointed in it. Experience proved that there was nothing so uplifting after severe fatigue as this cup that cheered, but did not intoxicate. Then came the chemical revelation that it was not because of any nutritive value, but because it was a natural stimulant that extract of beef gave its excellent results. Beef-extract proved to be not essence of beef, but mainly a composition of the organic meat salts and extractives that are at once tonic and appetizing, though not purveyors of nutrition.

The revulsion of feeling occasioned by the unexpected announcement of a deficiency of nutritive value where so much had been predicted led to the depreciation of meat preparations of all kinds. Meat-juice and other materials that contain large quantities of the albuminous portions of meat shared in this condemnation. As always happens in the history of medicine, the pendulum of medical opinion swung too far to the other extreme. It is under the influence of this other and equally fallacious exaggeration of opinion that we hear meat-juice preparations so unsparingly condemned by certain clinical authorities who do not know the actual chemical status of these substances. Not a little has been said recently with regard to the merely stimulant effect, especially when employed as an ingredient of infantile feeding. Needless to say, the properly expressed juice of meat is a precious concentrated, yet readily digestible, food. To speak of meat-juice as "beef cocktail" is to misapprehend entirely its nutritive significance and to mistake its chemical contents. Properly prepared beef-juice is stimulant, but this effect is only of secondary importance compared to its positive nutritive value. To confound beef-extract and beef-juice is to make a serious error. To condemn one because of the other is to deprive the physician of a very important practical auxiliary in the treatment of exhausted conditions, no matter whence derived and whether occurring in adults or in children. *Medio tutussimus ibis*—there is safety in a middle course. Beef-juice is not a remedy for every disturbance of nutritive metabolism in the child; it is, however, a very precious accessory to other natural and drug methods of treatment, and its indications and limitations should be studied further. Its value will repay the investigators.

A DESERVED TRIBUTE TO SURGEON-GENERAL STERNBERG.

On June 13th, as we announced in our last issue, a complimentary dinner is to be tendered to Surgeon-General Sternberg here in New York. The occasion is the retirement of the Surgeon-General because of the age limit. The committee under whose auspices the dinner is given is made up of representative members of the medical profession from all parts of the country.

The retiring Surgeon-General deserves well the tribute thus to be conferred on him. His services to the Army Medical Corps put not only the medical men of the army, but the whole profession of the country under obligations to him. His contributions to the scientific side of medicine have brought honor not only to himself, but to American medicine.

Surgeon-General Sternberg's work in the nascent science of bacteriology during the penultimate decade of the nineteenth century will not soon be forgotten. It did more than anything else to make the foreign scoffers at scientific medical progress in America pause. He was practically the first to show how much the enterprising spirit of American medical men might accomplish when once they set seriously at work at investigation rather than money-making. A change has come over the situation since then and all now acknowledge the worth of the work being done in America. For this happy change Surgeon-General Sternberg's example is not a little responsible.

Sternberg's work on yellow fever, although uncompleted, will ever remain as a monument to the man and his thoroughly conservative spirit of investigation. In those early days of bacteriology it would not have been hard to persuade one's self that some one of the many bacteria found was the specific cause of the disease. The announcement of such a discovery would have meant immediate fame. Sternberg's investigations were carried out amid the greatest possible dangers, but his judgment remained perfectly stable and though many microbes were isolated, no rash announcements were made. Several reputations have since been achieved out of repetitions of the observations he then made, but his work stands as a model of calm conservative investigation.

The medical profession of the country honors itself in honoring such a man. We join heartily in the felicitations that are preparing for the occasion. We are sorry to think of Surgeon-General Sternberg's retirement from the post in which he has accomplished so much good, and we wish him many years of happy enjoyment of the satisfaction of duty well done, which must surely be his under the circumstances.

ECHOES AND NEWS.

NEW YORK.

Coney Island's Hospital Opened.—The Reception Hospital, which is in Sea Breeze Avenue, Coney Island, was reopened this week for the summer, under the charge of Dr. John Burns of the Kings County Hospital. During the summer months last year it treated 1,300 patients.

Lebanon Hospital Gets $60,000.—The ninth annual meeting of the Lebanon Hospital at Westchester and Cauldwell Avenues in The Bronx was recently held at the hospital. The old officers were reëlected. The President, Jonas Weil, announced that Mrs. Clara Simon, whose husband died three years ago, has given $60,000 cash to the hospital.

Possibly Plague.—The British steamer "Eleanora Mail," which arrived recently from Pernambuco, was detained at quarantine with a case of sickness on board, the character of which could not be determined. The patient had a swollen gland. He was taken to Swinburne Island for examination. Bacteriological tests were made and showed the case to be not one of plague.

The Charles Rice Memorial Committee.—The Board of Trustees of the College of Pharmacy of the City of New York, in conjunction with the Committee of Revision of the U. S. Pharmacopœia, have appointed a Memorial Committee whose duty it is to solicit funds for the purpose of placing a suitable monument over the unmarked grave of the former Chairman, the late Dr. Charles Rice, and to defray the expenses of preparing a Memorial Volume, to contain his portrait and a sketch of his life and labors. All are invited to contribute to this fund who appreciate the labors of this great genius who sacrificed so much in the cause of medicine and pharmacy, directing three decennial revisions of the United States Pharmacopœia, the latter of which, as an authoritative and model work, is unequaled by that prepared by any other Committee. All contributions should be sent to either of the following: Virgil Coblentz, 115 West 68th Street, New York City; S. A. D. Sheppard, 1129 Washington Street, Boston, Mass. The Memorial Committee consists of the following members: Prof. James H. Beal, Scio, Ohio; Prof. Virgil Coblentz, N. Y. City, N. Y.; Charles E. Dohme, Baltimore, Md.; Prof. Henry Kraemer, Philadelphia, Pa.; Prof. Joseph P. Remington, Philadelphia, Pa.; Samuel A. D. Sheppard, Boston, Mass.; Prof. Reynold W. Wilcox, N. Y. City, N. Y. This is a most worthy movement in honor of a man who was little known to medical practitioners, yet who made the standards of the Pharmacopœia what they are, the equal of any and the superior of most similar works.

Presbyterian Hospital Alumni Dinner.—An address was made by Dr. Briddon before the Society of the Alumni of the Presbyterian Hospital in the City of New York on May 17th, when the Society met for a dinner at the Arena. Some forty-five members with honorary members and invited guests were present. Following the dinner and the address by Dr. Briddon, other addresses were made by members of the visiting and consulting staffs of the Hospital and by Dr. Booth, President of the St. Luke's Alumni Society. A letter from Dr. Briddon was read in which he presented to the Society a gold medal to be awarded every two years to that member of the Society of the Alumni of the Presbyterian Hospital presenting the most meritorious original essay on a medical, surgical, bacteriological or pathological subject. The medal is to be awarded by a committee of three from the medical board of the Hospital and the successful essay is to be published in the Presbyterian Hospital Medical and Surgical Report. In the event of none of the essays being of sufficient merit, the fund for the medal is to be used for the purchase of medical works for the library of the Hospital. The medal to be first awarded was exhibited. It contains on its obverse a copy of a Greek bas-relief representing Æsculapius greeting his disciples. A vote of thanks was presented to Dr. Briddon for his kind offer which was accepted.

A Long Criminal Ancestry.—According to the statement of a Mrs. Annable at a recent meeting in New York "a woman of criminal tendencies, whose occupation was the keeping of a disreputable house and whose habits were of the lowest, including excessive indulgence in alcoholic stimulants, died when she was fifty-one years old. That was in 1827. Her descendants have now been traced. They number eight hundred. Seven hundred of them are criminals, having been convicted at least once. Three hundred and forty-two of them are drunkards, acknowledged by all as such. One hundred and twenty-seven are immoral women. Thirty-seven of them were murderers and were executed for their crimes. This family has cost the nation $3,000,000, this being the sum paid out for their trials and executions."

The Good Fortune of the Long Island College Hospital.—In memory of his brother, the late Henry W. Maxwell, J. Rogers Maxwell will erect a new home for the Long Island College Hospital at a cost of $400,000. The bulk of the estate of Henry W. Maxwell, amounting to $3,000,000, was bequeathed to his brother. During his life Mr. Maxwell, who was president of the Board of Regents of the hospital, presented $100,000 to the institution toward the erection and maintenance of the training school for nurses connected with the hospital. It is rumored that the Board of Regents purposes changing the name of the hospital to the Maxwell Long Island College Hospital. This will be done as soon as the new building is completed. The new building will be at Henry and Amity Streets. It is to be simple in design and of brick, with stone trimmings, and fireproof. In all, four pavilions are to be built, and those now used by the institution torn down. In order, however, that the hospital may not be without a home, a new pavilion will be erected before an old one is demolished. Though the plans are not completed it has been decided to build a modern and well-equipped hospital. The main structure will be five stories in height, and the one which will contain the private wards may be higher. They will be known as the private, central, north and south ward buildings, and will be connected by corridors enclosed in glass, which will also be used by the patients as sun-bath rooms.

Gift to the General Memorial Hospital.—It is announced that Mrs. Collis P. Huntington has offered the sum of $100,000 to the General Memorial Hospital for the Treatment of Cancer and Allied Diseases, at One Hundred and Sixth Street and Central Park West, for pathological purposes. The announcement is made in the report of the President of the hospital, John E. Parsons, included in the annual report of the hospital just made public, as follows: "It affords me very great gratification to record the fact that during the past year Mrs. Collis P. Huntington has proposed to put at the disposition of the hospital the sum of $100,000, to constitute a Collis P. Huntington fund, the income from which is to be used for pathological research. Our warmest thanks will be due Mrs. Huntington and her son, Mr. Archer M. Huntington, who is a member of our board, should this intention be carried out." The General Memorial Hospital was opened for patients in the winter of 1887, and for some years was known as the New York Cancer Hospital. Its work, however, is not limited to cancer. The report for the last year shows that 929 patients were treated, and that the total number of operative cases was 824. In all 1,146 operations were performed.

Dinner to Surgeon-General Sternberg.—Those interested in obtaining tickets for the dinner to Surgeon-General Sternberg may do so by sending $10 to Dr. Hermann M. Biggs, 5 W. 58th Street, New York City.

A Book Swindler among the Medical Students.—An agent for a certain publisher of lay works is trying to swindle the medical students of New York City by an old dodge. He gets the student to sign his name on a piece of paper under the guise of sending him a sample copy of their publication, and subsequently the student finds he has signed a contract for some fifty to a hundred dollars' worth of books, the small piece of paper on which he signed his name being the end of a contract blank turned over.

New York Academy of Medicine.—A stated meeting will be held Thursday evening, June 5th, under the auspices of the Section on Ophthalmology. The following papers will be read: Contagious Ophthalmia in Industrial Schools, Asylums, and Lying-in Hospitals, by Richard H. Derby, M.D.; Modern Methods Employed in the Prevention and Treatment of Trachoma and Other Forms of Contagious Ophthalmia, by Kark Koller, M.D.; The Laws of the State of New York Relating to Contagious Ophthalmia, the Results of Their Enactment, and the Desirability of Farther Legislation, by Frank Van Fleet, M.D. Discussion by Drs. Charles S. Bull, Peter A. Callan, John E. Weeks and others.

PHILADELPHIA.

Bequests to Institutions.—The will of the late James H. Grier of Doylestown bequeathes $10,000 each to the Presbyterian and Hahnemann Hospitals of this city and $5,000 each to the Old Men's Home and the Presbyterian Orphanage.

New Hospital at Chester.—The Crozer Homeopathic Hospital to cost $125,000 has been begun at Upland adjoining the Lewis Home for Incurables. The main building will be 50 by 100 feet in size.

Vancancies in College Faculties.—Just at present there seems to be a slight reaction in the medical schools of this city against the modern tendency to specialism. The chair of genito-urinary surgery at the Medico-Chirurgical College, made vacant by the retirement of Dr. E. R. Kirby, is not to be filled, the general surgeons doing that work. The chair of ophthalmology at Jefferson, made vacant by the resignation of Dr. G. E. De Schweinitz, is to be left vacant for the present at least, the work of that department being taken by the clinical professors. A member of the Board of Trustees of Jefferson College is quoted as saying: "There has grown in the last few years too much 'specialism' in medicine—that is, as far as the undergraduate student is concerned. There is now crowded into the four-year course which the student must pursue an enormous amount of work. The greater amount of this teaching is necessary to a thorough knowledge of medicine, but there are being taught and elaborated many subjects which the student when he receives his degree cannot make use of in his daily practice, and the aim is to attach less importance to the specialty and spend more time on the fundamentals of medicine—that is, the principles and practice of medicine, therapeutics and surgery. It is our wish to turn out students thoroughly drilled in these fundamentals, and then, after he has passed the State Board of Medical Examiners and wishes to know more of a special branch, the physician can gain such knowledge by post-graduate work."

Indications that Present Methods of Fumigation are not Effective.—At the meeting of the Pathological Society, May 22d, Dr. G. E. Pfahler read a paper on this subject. The paper was based on investigations made at the Philadelphia Hospital where Dr. Pfahler is assistant chief resident physician. The fact that epidemics broke out in the children's wards soon after they had been fumigated with formaldehyde gas led to the investigations. As an experiment, cultures of the staphylococcus were placed in close proximity for some time to the current of formaldehyde gas as it issued from the generator. All the cultures grew well. Inoculations were then made from the floor, mantels, and bed of a room which was then fumigated, three times the ordinary amount of gas being employed. After a number of hours inoculations were again made from the same places. The inoculations made after fumigation grew as well as did those made before. Cultures were then made from a room of 700 cubic feet in size after fumigation for different lengths of time, one, two, four, five, six, nine, and thirteen hours, respectively. During the latter length of exposure 32 ounces of formalin were used and the room allowed to remain closed for fifty-six hours. All the cultures made after each exposure grew. No attempt was made to isolate the different organisms. Dr. Pfahler stated that their investigations led them to believe that the other precautions always taken in addition to fumigation, namely, scrubbing the room and furniture and sending the clothes to the laundry after fumigating them, had probably more to do in keeping down epidemics than had the fumigation.

Dr. Joseph McFarland said that he had examined the various generators as they appeared on the market and finds that none of them do the things claimed for them. At the same time it must be remembered that formaldehyde gas is only a superficial disinfectant and that it does not diffuse readily. Notwithstanding these objections to the generators and to the gas itself, it is of great value, especially so because the organisms it is most needed to destroy, such as typhoid, cholera, and diphtheria bacilli, are of low resisting power. Aerial and surface disinfection are accomplished by the use of formaldehyde, clothes, the floor, etc., must be otherwise disinfected.

Diagnostic Value of Ganglionar Lesions in Hydrophobia.—Drs. M. P. Ravenel and D. J. McCarthy discussed this subject and presented a further report of cases. They have now studied three human beings and 105 animals. The changes in the central nervous system in persons and animals dying from hydrophobia are (1) the accumulation of round cells around the vessels and (2) the presence of the tubercles of Babes. The changes in the intervertebral ganglia, to which particular attention was called, are chromatolysis, vacuolization, and the accumulation of round cells around the vessels. These are only specific when they occur without any changes in the peripheral nerves. Any lesion of the peripheral nerves, unless it be an old chronic condition, excludes hydrophobia. Of the 77 dogs studied 66 were found to be positive and in 60 of these the diagnosis was made within thirty-six hours. There was not a doubtful case in the dogs studied and, although only a few human beings were studied, the lesions are believed to be as positive for diagnosis as they are in the lower animals. The fact that none of the dogs were doubtful is of value as these are the most important cases for rapid diagnosis. The conclusion of the speakers was that the lesions in question are absolutely diagnostic for practical purposes.

Obituary.—Dr. James Rose, a prominent surgeon of Waynesburg, Penn., died May 21st as the result of being struck on the head with an empty bottle thrown by a boy with whom he had a dispute.

Dr. Allen H. Hulshizer, a well-known physician of this city, died May 19th, aged fifty-one years. He graduated from Jefferson College in 1878 and was prominent in medical and business circles. He was for some years a member of the State Board of Medical Examiners.

CHICAGO.

Fibrosarcoma of the Soft Palate and Tonsil.—Dr. Charles M. Robertson recently reported the case of a farmer, aged sixty-two years, who, while picking his teeth with a straw, pricked the left tonsil, causing only slight pain. In a few days he noticed a small swelling of the left tonsil, which increased rapidly in size until the end of eight weeks, when he presented himself for relief. At this time the patient experienced great difficulty in breathing and it was almost impossible to swallow food. Upon examination, a large tumor was found occupying the left palatal arch, well down to its base, involving the tonsil and side of the pharynx as far as the epiglottis, and up behind the edge of the hard palate as far as the left Eustachian tube. It extended forward into the mouth to within one inch of the incisor teeth. The growth was smooth in contour, lighter in color than the surrounding tissues, and firm and elastic to the touch. Under cocaine, a piece of the growth was removed for microscopic examination and pronounced fibrosarcoma. The following week the growth was removed under chloroform anesthesia. It was found to be encapsulated, and on this account a favorable prognosis was made. In looking over the literature he finds twenty-five cases reported of sarcoma of the soft palate and forty-five additional cases of sarcoma in which tonsil alone or the tonsil and the soft palate were involved. In nearly all the cases the growth was removed by external operation and in these cases recurrence was frequent, whereas the encapsulated growths removed by the mouth were not so prone to recurrence. The case under consideration has as yet shown no signs of new growth, twenty months having elapsed, and therefore he feels justified in reporting it as a cure.

Resection of the Superior Maxilla.—Dr. Wm. E. Casselberry showed a case in which an unilateral resection of the superior maxilla had been made on account of intranasal fibrosarcoma. He presented the patient chiefly to demonstrate the degree of deformity resulting. The incision was made from below the orbit around the nose and through the lip, the flap dissected back, and the left maxilla, including the teeth, removed. The man's cheek, however, still has a reasonable prominence. Union has failed along the line of the cleft in the hard palate, so that the patient practically now has an acquired cleft palate. The situation of the growth and a shadow on translumination led him to think the antrum was involved, and this was one reason why resection of the superior maxillary bone was decided on. When he came to shell the growth out, it was disclosed that the antrum was not directly involved, but he is still of the opinion that the operation was justified by the appearance and character of the growth, but more so on the supposition that the antrum was involved. Had he been able to determine that the maxillary sinus was not affected, he would have advised a less extensive operation. There is as yet no definite evidence of recurrence, although the tissue which has partly filled in the space of the cheek-bone does not look entirely natural. Another hazard of the operation concerns the necessity of ligating the common carotid, or at least the external carotid artery in order to control hemorrhage. Following the operation, this patient became paralyzed on the right side; the paralysis has persisted somewhat, but it is gradually becoming less. Inasmuch as the line of ligature of the external carotid is very close to the common carotid, the paralysis might have occurred from a clot going through the common carotid as an embolus.

Concha Bullosa.—Dr. George E. Shambaugh presented a median sagittal section of a nose, showing a large bone cyst in the anterior end of the concha media. The cyst had thin, bony walls, and was lined with smooth mucous membrane. It was 28 millimeters long and 25 millimeters broad, and presented an empty, air-containing cavity, which communicated freely with the middle meatus, with the frontal sinus, with a large ethmoid cell pushed into the frontal sinus, and with the ethmoid labyrinth above and behind. The concha bullosa, or cystic enlargement of the concha media, is usually found as an empty, air-containing cavity, but occasionally it is found the seat of a mucocele or an empyema. As a rule, it is not associated with any inflammatory condition and the enlargement should be looked upon not as a pathologic product, the result of an inflammation, but as an anatomic variation, the result of a developmental anomaly.

Illinois State Medical Society.—The fifty-second annual meeting of this Society was held in Quincy, May 20, 21 and 22, 1902, under the presidency of Dr. John T. McAnally of Carbondale.

Committee on Constitution and By-Laws.—This Committee presented a new document, which was drafted in conformity with the plan of reorganization of the American Medical Association. It was thoroughly discussed, amended, and finally adopted as amended.

Committee on Medical Legislation.—This Committee presented the draft of a proposed bill for the regulation of the practice of medicine and for the establishment of a Board of Medical Examiners in the State of Illinois. The bill was discussed at length and adopted by the Society.

Commencement Exercises.—The College of Physicians and Surgeons (Medical Department of the University of Illinois) held its twentieth annual commencement exercises May 20th. The doctorate address was delivered by Dr. W. S. Christopher. Professor T. J. Burrill, acting President of the University, conferred degrees and announced honors. Dr. S. M. Kyes, valedictorian, responded for the class, which numbered 222.

Officers of Illinois State Medical Society.—The following officers have been elected: Dr. M. L. Harris, Chicago, President; Dr. E. W. Weis, Ottawa, Secretary; Dr. James H. Stowell, Chicago, Assistant Secretary; Dr. Everett J. Brown, Decatur, Treasurer, and Dr. George N. Kreider, Springfield, Editor of the Society's journal. Chicago was selected as the place for holding the next annual meeting.

Ban on Incurable Diseases.—Dr. W. E. D. Wendstrand, medical officer of the day at the Cook County Hospital, declares that a number of people suffering with chronic and incurable diseases are being sent to that institution when they should be sent to Dunning. He advocates sending notices to the various hospitals and announcement to the public that the County Hospital does not admit such cases.

GENERAL.

Russian Physicians.—The number of physicians practising in Russia amounts to 20,092, of which 19,450 are men and 642 are women.

Comparative Sanitary Condition of Armies.—M. Kende of Budapest has made a study of this subject from which it appears that the sanitary condition of the German and French armies is better than that of any of the other European armies. Mortality is thus estimated: Of 1,000 men, Italy loses 9, Austria 6, France 5, and Germany 4. The number of suicides in 100,000 men equals 99 in Austria, 78 in the United States, 51 in Germany, 32 in Italy, 22 in England, 17 in Switzerland, 15 in Russia, 13 in Holland, and 9 in France.

Delaware State Medical Society.—The one hundred and thirteenth annual meeting of this venerable society will be held at Newark, Delaware, June 3, 1902. The program announced contains some interesting features for discussion. Among these will be presented The President's Address, by Dr. E. S. Dwight; Some Causes for Public Objection to Vaccination, by Dr. Wm. C. Pierce, of Wilmington; Smallpox, by Dr.

James H. Morgan, of Wilmington; How Long Should Cases of Diphtheria be Quarantined, by Dr. Robin, of Newark; The Treatment of Pelvic Inflammation and Suppuration in Women, from the Standpoint of the Family Physician, by Dr. Chas. P. Noble, of Philadelphia.

Mississippi Without Records of Mortality.—Discovery has been made that the State of Mississippi tabulates no records of vital statistics. A life insurance company desiring to do business in that State, not long ago, asked the Insurance Department for data covering the mortality experienced during recent years. These the Secretary of State was unable to supply. The necessity for trustworthy statistics exists more in Mississippi than probably any other State, for few commonwealths have so bad a reputation in this regard. At the last session of the Legislature, a bill for the establishment of a department of mortuary and vital statistics failed to pass, although recommended by the Board of Health. All that the Secretary of State could furnish the insurance company were some statistics tabulated by Col. Power, in which the estimate of the mortality was a little under thirteen per thousand inhabitants. To this he appended a certificate of Dr. Hunter, Secretary of the State Board of Health, who is well informed regarding conditions throughout the State, and who states that health conditions in Mississippi to-day are most favorable.

Obituary.—Dr. William Craig Burke died in Cheyenne, Wyo., May 24th, at the home of his son, T. F. Burke, United States District Attorney. He was ninety-five years old. He was a graduate of Dartmouth College, class of 1833, and was the oldest living alumnus. He was a member of the church council which tried the Rev. Henry Ward Beecher.

Dr. William H. Watkins of New Orleans is dead in Milwaukee, where he had gone on account of his health. He was a native of New Orleans and fifty-four years old. He entered the Confederate Army as a boy of fifteen and rose to be captain of cavalry when only eighteen. Entering the medical profession he was chief medical inspector of the New Orleans Sanitary Association, chief inspector of the New Orleans Board of Health and a member of that body, editor of the "New Orleans Medical and Surgical Journal" and chairman of the Yellow-Fever Board during the epidemic of 1897.

Dr. John Vedder, President of the New York State Antivivisection Society, died at his home, Saugerties, N. Y., May 22d. He was eighty-six years old. He was a classmate of Oliver Wendell Holmes at Pittsfield, Mass., Medical College, and was graduated from the Herkimer, New York, Medical College. He was one of the oldest practising physicians along the Hudson River.

CORRESPONDENCE.

FOREIGN SOCIETIES.

German.

OPERATIVE REMOVAL THROUGH THE VAGINA OF TUBAL PREGNANCY—BRAIN SURGERY—MODERN TREATMENT OF BONE FRACTURES—SURGICAL TREATMENT OF PUERPERAL PYEMIA—ENCYSTED PROJECTILES IN THE HEART.

DURING the past month the medical and scientific societies of Germany have held a number of important meetings from which the following selections have been made:

P. STRASSMANN, at the Berliner Medicinische Gesellschaft, March 19, 1902, stated that the formerly assumed infrequency of extra-uterine pregnancy is not established by modern researches. In fact its relative frequency is not astonishing if one accepts the supposition that the fertilization of the ovum takes place, not in the uterus, but in the fimbriated extremity of the tube, which is a well established physiological fact, so far as animals are concerned. Therefore any factor which checks the progress of the ovum toward the uterus may cause extra-uterine pregnancy. Examples of such conditions are inflammatory residua, excessive length of the tube, etc. Operative interference should always be resorted to. The author has had in his practice nine cases of extra-uterine pregnancy upon which he has operated through the vagina, once on account of recent rupture, twice for mole formation, and six times for tubal abortion. In these patients he also found at the same time numerous other pathological accompaniments, for example, cysts of the ovary, tears in the perineum, etc. In operating upon these cases by the vagina, he sometimes opens the anterior wall; at other times the posterior wall. Traction of the uterus downward is not necessary, because the relaxed condition of the broad ligament on the affected side permits the tube, as a rule, to be easily drawn down through the wound. As a rule the ovary should be left behind. The opposite side must always be inspected as a precaution, while the wound is open. Lysoform is the means of disinfection upon which he has most distinctly relied. For the success of vaginal operation in such cases it is essential that the pregnancy be not more than four months advanced. Its indications are, briefly recent rupture, hemorrhage and other similar severe symptoms. Laparotomy should be done whenever the diagnosis is in doubt, for the purpose of distinguishing between this condition and that of appendicitis, of perforated ulcer of the stomach, and the like. When sufficient skilled assistance cannot be obtained and when bleeding is very active, laparotomy is the preferable operation. As to diagnosis, he believes that whenever there is a history of irregularity in menstruation, accompanied by pain, one may suspect extra-uterine pregnancy.

F. KRAUSE, at the Verein für Innere Medicin in Berlin, March 17, 1902, read a paper on brain surgery, comprising a review of the present status of this subject and a report of his cases. Brain surgery, as Von Bergmann has said, is a surgery of the motor area alone, but at the present time other areas are being approached with success. Operation is indicated in Jacksonian epilepsy, abscesses, tumors, foreign bodies and plastic work. So far as epilepsy is concerned, it is well established that brain surgery applies only to pure cases of Jacksonian epilepsy, and the standard of cure is that five years of entire freedom from symptoms must elapse before a cure can be proclaimed. It is hardly fair to speak of any case as improved in this disease, because there can be but two true classes, the cured and the uncured. To illustrate this point he reported the case of a two-year-old child on whom he had operated for encephalitis. Two years later the child was attacked with epilepsy and remained a victim of the disease in severe form. When it was sixteen years old he again operated and removed a cyst. The child has remained perfectly well since 1894. All its mental faculties have returned. He has failed in a number of cases in which he had removed the diseased area of the brain tissue, although there was present neither tumor nor cyst, following the dictum of Victor Horsley. He has by this procedure obtained a probable cure in only one case by extirpation of the facial center. Brain neoplasms, especially cysts and foreign bodies, he has treated more successfully by operation. In a workman, thirty-one years old, the victim of an injury to the skull, who developed pains, which seemed to proceed from the opposite point of the head, namely by contrecoup, and could be ascribed to scar, to cyst, or to the like, which had appeared in this area. At the operation a number of cysts were evacuated. After an uncertain degree of improvement the patient was discharged from the hospital, but after a few days sudden death occurred. The autopsy showed cysticercus racemosus. Tumors and abscesses of the cerebellum are no longer considered quite unoperable. One great difficulty arises from the fact that no one can say in which hemisphere of the brain such an abscess lies. For this reason he lays bare both hemispheres. He has operated upon three patients in such a manner without death. It is a severe procedure, but it is justified by the fact that without it all of these patients would without doubt have died. Foreign bodies were illustrated by a bullet which he had removed from the upper surface of the petrous bone with entire success. He then described a case in which the point of a knife blade had broken off in the posterior fossa of the skull where it produced an abscess. Abscesses following otitis media he has operated upon with great success. In one patient an abscess of the cerebellum was evacuated, but death followed as a result of thrombosis of the lateral sinus. He operated on a patient suffering from the latter condition four years ago, after ligature of the internal jugular vein. Death occurred later through infection of the lymphatics. Plastic work for covering defects of the bones of the skull has met with variable success, but best by following the method of Koenig, which entails a removal of the outer layer of the neighboring bone and transplantation of it over the defect. If no pus be present, success is almost sure to follow it.

Bier, at the Greifswalder medizinische Verein, Feb. 1, 1902, presented data concerning the more modern progress in the treatment of bone fractures. To the X-ray is due most of the credit for the great advances made in the treatment of fractures. It not only assists in making the diagnosis, but permits the reduction to be made with great exactitude. The ambulatory dressings, first introduced by Hessing and improved by Krause, are another step in advance. The recognition of the fact that to lie a long time in bed with fixed dressings is rather disadvantageous, while a rather frequent change of splints with massage, active and passive movements of the neighboring joints are now considered advisable. At the present time Bier, acting on Petersen's suggestion, is treating all fractures in the neighborhood of joints, especially when the radius is involved, without any fixed dressings. He simply applies firmly to the wrist a splint in which the forearm can be carried much as if in a sling. In fractures at the neck of the femur in old people, Bier places the thigh between sand-bags and then endeavors to prevent atrophy of the bone by percussion upon the sole of the foot and upon the trochanter and by early movement and massage.

Trendelenburg, at the Medizinische Gesellschaft zu Leipzig, Feb. 11, 1902, read a paper on the surgical treatment of puerperal pyemia. He remarked that on several occasions he has attempted to check puerperal thrombotic pyemia by tying the veins efferent from the affected regions, namely, the hypogastric and spermatic veins. The ligature of the veins was done extraperitoneally after freeing the peritoneum through an oblique incision above Poupart's ligament. One patient cured by this procedure was presented to the society. In other cases, in which the disease had progressed too far, an unfavorable result could not be prevented.

Riethus gave a demonstration of a gunshot wound of the heart with the bullet encysted in the muscle. The patient seven months ago had been shot in the breast with a 6 mm. revolver. Immediately thereafter he showed severe collapse and was unconscious for six hours; the wound of entrance was at the middle of the sternum, at the level of the articulation of the fourth rib; there was no wound of exit, no hemopericardium, no hemothorax; the action of the heart was at first very feeble, but regular. After twenty-four hours, almost complete recovery from the shock and later a recovery without incident occurred. Later there appeared a temporary high-grade irregularity of the heart action without anything to point directly to damage of the heart muscle. After an examination with the X-ray the shadow of the bullet was found in the middle of that of the heart muscle and moving synchronously with the movements of the organ. The position of the bullet was assumed by the author with a fair degree of probability to be the wall of the right ventricle at the point where the bullet was shown in the specimen. The irregularity of the heart, however, gave the impression that the bullet was free in the cavity of the organ and moving about therein. In addition to this case another has been reported, both by Bardenheuer and Podres, observed during life by means of the X-ray. In order to prove that several foreign bodies may exist in the right ventricle of the heart without causing emboli or other disturbances, Riethus experimented on dogs, and found that in one animal, two, and in the other, three, small bullets chained together could be introduced into the heart through the jugular vein with success. Examination of the animals under the X-ray showed their presence beyond all doubt.

LEUCOCYTOSIS AS A POINT OF PROGNOSIS IN APPENDICITIS.

To the Editor of the MEDICAL NEWS:

DEAR SIR: In the article with the above title, published in the MEDICAL NEWS April 5, 1902, the authors. Dr. Henry M. Joy and Dr. Frederick T. Wright, quoted me as having inaugurated the practice of making leucocyte-counts in appendicitis patients at the Calumet and Heckla Hospital, and state that I received the suggestion from Dr. Cabot. The article itself being of such superior excellence and, in my opinion, of such serious importance, I deem it worthy to state in justice to all parties that I received the suggestion from Dr. George Dock, of Ann Arbor, Mich., and it was upon his advice that I inaugurated the practice. Several months later Dr. R. C. Cabot very cordially approved the practice.

E. H. POMEROY, M.D.

Highland Park, Ill.,
Apl. 28, 1902.

SOCIETY PROCEEDINGS.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Stated Meeting, Held April 2, 1902.

The President, Alexander Lambert, M.D., in the Chair.

Embolism of the Mesenteric Artery.—Dr. Alexander Lambert reported this case. The patient was a physician, thirty-four years of age, an alcoholic subject, who returned home from a rather prolonged spree and was awakened shortly afterward by nausea, vomiting and abdominal pain. He was called to see a patient and took a hypodermic injection of morphine before going out. During the day the pain continued and enemata were taken without result. At 10 P. M. he was first seen by the speaker and by Dr. W. B. Coley. The countenance presented a very anxious expression, the pulse was 100 and the temperature 98° F. There were no heart murmurs. The abdomen was moderately distended and tympanitic. There was slight rigidity of the recti muscles in the epigastrium and an indefinite sense of tumefaction. The nausea and vomiting had not occurred during the day. There was no tenderness in the region of the appendix. A high enema of glycerin and warm water brought away some gas and fecal matter. The diagnosis of intestinal obstruction was made at this time. At eight o'clock the next morning his condition was about the same, except that there was a little more prostration. Further attempts to move the bowel during the night had been without result. Up to this time there had been almost no secretion of urine and the little that was passed was bloody. Dr. W. T. Bull was then called in consultation and agreed as to the obscurity of the case, though he thought it to be one of intestinal obstruction. About 8 A. M. on the following day the vomiting became fecal and the patient, though conscious, was extremely prostrated. The diagnosis was still in doubt. Operation was at once undertaken. On making a median incision from the ensiform cartilage to the umbilicus a large amount of bloody fluid poured out. The omentum in the epigastric region was thickened and matted together by recent adhesions and it was studded with small emboli and infarctions. A large fold of the mesentery of the small intestine was found to be greatly thickened in places (one-half to one inch in thickness) and involved a considerable area. A diagnosis of mesenteric thrombosis was then made. As peritonitis had already developed no further operative interference was attempted. The large amount of mesentery involved absolutely contraindicated a radical operation. The patient suffered much from shock after the operation and died quite suddenly about seven hours later. At autopsy, 300 c.c. of thick creamy pus escaped and the entire peritoneum was covered with a thick fibrinous exudate. The entire gut was extended with gas, particularly the cecum. The omentum was studded with small spherical, injected, gangrenous nodules, evidently minute embolisms of the omental vessels. The spleen was displaced upward and was small and soft. The stomach showed a chronic gastritis. The appendix was sharply folded upon itself and had ruptured at some remote time. The mucosa of the colon was congested and there was an abundant secretion of mucus. The mucous membrane of the small intestine was, for the most part, greatly congested. A few emboli and small gangrenous patches were found. The mesentery of the smaller folds of the ileum showed marked congestion and minute emboli of the vessels. The mesenteric vessels were much thickened and showed a markedly atheromatous intima. The pancreas was riddled with fat infiltration. There was extensive infiltration of the interstitial tissue of the pancreas. The liver was enlarged and in places showed fatty degeneration. The gall-bladder was distended with bile. The ducts were open. The suprarenal capsule showed fatty infiltration. The parenchyma of the kidneys was markedly fatty. The heart was large and the muscle showed extensive fatty degeneration. There was a preformed clot in the heart, which was probably the origin of the original emboli. The right pleural cavity was obliterated by subacute adhesions. There were a few recent infarctions in the peripheral portions of the lung. No new light was thrown upon the case by the microscopical examination. Sections through the embolic foci showed extensive blood extravasations. Pronounced atheroma was general. [Dr. Lambert's paper will appear in a subsequent issue of the MEDICAL NEWS.]

Differential Signs.—Dr. William B. Coley said that in watching the case just reported he had been struck with the lack of correspondence between the distention and the prostration. When first seen there was as much distention as is usually present on the second or third day of a general peritonitis, though there was not quite enough tenderness. At the first examination he had noted a peculiar resistance in the epigastrium and this became rather more marked subsequently. What was thought to be a tumor was a mass of omentum bound together by adhesions and filled with these infarcts. This case differed from many of those previously reported by the absence of bloody vomitus and bloody diarrhea. This patient had marked distention, pain, absence of prostration and practically a normal temperature up to the second day. On that day he had been seen twice by Dr. W. T. Bull. The most probable cause of the condition seemed to be intestinal obstruction, but the condition of the patient was considered so good as not to warrant operative interference at the time. When the symptoms became more serious the operation was promptly undertaken; the diagnosis was made chiefly from the enormous thickening of the mesentery. In another case of the kind he would be in favor of an earlier operation. In most cases it is impossible to make a correct diagnosis; operation offers a very slight chance in a very small proportion of the cases.

Dr. John B. Walker said that he had seen one other case, two years ago, but the diagnosis had not been made until after death. It had come on following resection of four feet of the intestine.

Dr. R. T. Morris said he had seen only small localized septic thromboses of the mesentery.

Dr. John F. Erdmann said that during the past winter he had operated upon a case of intestinal obstruction from bands, and in that case there was an embolism of the mesentery. The patient died within a few days after the operation.

Dr. Lambert, in closing, said that there had been a patient at Bellevue Hospital one year ago who had been admitted with a history of intense pain in the abdomen. There was no nausea, vomiting or diarrhea, but there was practically obstipation. The man lived about ten days after the first symptoms; the autopsy showed thrombosis of the portal vein with thrombosis of the superior mesenteric vessels. It was interesting to note that the clot in the heart seemed to be the source of the emboli throughout the body. This naturally raised the question as to whether a clot in the right side of the heart could send small emboli through the lungs and out through the general circulation. Dr. W. H. Welch distinctly states that this is possible and frequently occurs, the lung capillaries being very elastic and the largest in the body. The intense fatty degeneration of the heart was such that the tissue seemed like putty when scraped with the knife. The man had been on an alcoholic debauch, and the fatty condition of the heart might have made the heart slow up so as to give rise to the formation of emboli ,and then a return to alcoholic drinking on the following day might have driven the emboli through the, system.

General Enteroptosis.—Dr. Robert T. Morris read a paper on this subject. It will appear in a subsequent issue of the MEDICAL NEWS.

Dr. L. W. Hotchkiss remarked that movable kidney occurred in a certain proportion of nulliparous women, and, of course, without any diastasis of the recti muscles.

Dr. Charles E. Quimby said that it was by no means easy to induce many of these women to submit to an abdominal operation. He had seen only one case which had been operated upon, but in that instance the patient had been relieved of a large and varied collection of symptoms, the result of general enteroptosis. There were the gastric and intestinal symptoms, but the kidney had not been dislocated. He did not think that the condition was the result so much of the corset having pressed the viscera down as it was that the corset had pressed steadily upon the abdominal viscera, and in this way had caused relaxation. The treatment of these patients by the use of massage and electricity applied to all of the abdominal muscles is quite satisfactory, and is greatly assisted by the use of a support of the type of the Teufel pregnancy belt.

Dr. W. B. Coley said that it was impossible for a ventral hernia to result from the operation described by Dr. Morris. Many of these operations result in a recurrence of the herniæ, and so give rise to a condition far worse than the one for which relief was attempted. He would like to know in what class of cases Dr. Morris would recommend this operative treatment.

Dr. Quimby said that the patient he had spoken of had been operated upon for an umbilical hernia, and had been very satisfactorily relieved.

Dr. Morris closed the discussion. He said that in cases of loose kidney occurring in young women without general enteroptosis the dislocation of the kidney is due to the "pumping action" of the corset. Webster's operation does not remove the broad sheath of transversalis fascia and peritoneum, and he thought that if this be not done there is, as Dr. Coley had suggested, a liability to the formation of a troublesome umbilical hernia. With the method which he advised he does not think there is danger of such a hernia occurring after the operation.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held May 1, 1902.

The President, Robert F. Weir, M.D., in the Chair.

This meeting of the Academy was held under the auspices of the Section on Genito-Urinary Diseases. The scientific business of the evening consisted of a discussion of prostatic conditions.

Abscess of the Prostate.—The paper of the evening was read by Dr. Samuel Alexander, who discussed from a number of novel standpoints the etiology, diagnosis, and treatment of suppuration of the prostate. Dr. Alexander said that abscess of the prostate is often neglected until serious complications and sequelæ develop. The principal reason for this neglect is that the anatomy of this region is not known with as much detail as it should be considering its importance, and the student of the pathological anatomy of these parts has rather rare opportunities for its cultivation. With regard to suppuration of the prostate, text-books of genito-urinary diseases usually have very little about the affection and treat it in a conventional manner, evidently not from the personal experience of the writer, but rather as a digest of preceding text-book material.

Etiology of Prostatic Suppuration.—The usual source of infectious material that causes abscess of the prostate is the urethra. The size and character of the abscess depend upon the amount of trauma and the virulence of the infectious material that gains an entrance. Not infrequently urethral injection given with a little more force than usual, or an ordinary posterior urethral injection may cause it. Prostatic abscess occurs especially after acute or chronic urethritis when the affection is overtreated. Abscess of the prostate used to be less frequent than at present, because the treatment of urethritis was less zealous and more judicious. Deep injections or irrigation may easily prove the source of suppuration in the prostate. Overinstrumentation, especially if done with any force, may easily set up prostatic infection. It is not an infrequent complication of urethral stricture; often the infectious material finds its way from the urethra through the excretory ducts to the gland into the glandular substance, and there gives rise to an inflammatory condition.

Follicular Prostatic Abscess.—This condition consists of a collection of pus in one of the follicles of the gland almost directly in connection with the urethra. As a rule, such abscesses open of themselves without any difficulty into the urethra and constitute a pathological condition only a little worse than posterior urethritis. The collection of pus is due to the obstruction of a duct or to the dilatation of a gland from the accumulation of purulent material near its orifice. When the purulent collection increases in size, edema of the prostate occurs. Under these circumstances if anything happens to increase the active congestion of the gland, as, for instance, sexual excitement or posterior urethritis, there is a notable increase in the edema of the prostatic structures. This leads to a swelling of the prostate very noticeable through the rectum and may even cause retention of urine.

Congestion of Prostate.—When the circulation of the prostate is impeded there is always pressure produced upon the prostatic plexus of veins. The gland is surrounded by a capsule which supplies the counterpressure, and when swelling takes place serves to shut up the veins before the circulation through the arteries is much interfered with. This increases the passive congestion of the prostate and may bring on retention of urine. The capsule of the prostate contains, moreover, certain muscle fibers which easily compress the prostatic veins, and this plexus is lacking in valves. This mechanical explanation for the occurrence of retention of urine has so far not been properly realized or, so far as Dr. Alexander knows, ever been described before.

Frequency of Urination.—Frequency of urination brings the muscle fibers in the prostatic capsule into active contraction. This has a further effect upon the prostatic veins and adds to the congestion, and so may induce complete retention of urine. In proof that this theory is correct is the fact that when the frequency of urination is relieved there is at once a lessening of the swelling of the prostate, and before long the patient is able to pass his urine voluntarily.

Simulation of Prostatic Abscess.—Dr. Alexander demonstrated a picture of a dilated posterior urethra from a patient in whom there had been a mistake in diagnosis as to the existence of a prostatic abscess. A stricture of the urethra existed at the bulbomembranous junction, behind which the urine had formed a dilatation of the urethra, including also the prostatic portion, so that the prostate seemed to be enlarged, and at times a sensation almost of fluctuation could be discovered. An infectious condition had developed as the result of the stricture, and as the patient suffered from fever diagnosis of abscess seemed justified. Such conditions are rare, but the treatment that Dr. Alexander suggests for prostatic abscess, namely, the opening of the urethra through a perineal incision and the evacuation of the abscess through this canal, would prove completely effective for the cure of this condition.

Position of Prostatic Abscess.—Collections of pus in the prostate occur most commonly in the lateral lobes of the gland below or behind the urethra and in front of the *veru montanum*. From this position an abscess can very well be opened through the urethra. When so opened drainage is more natural and more complete, and there is little liability of the spread of infectious material into the tissues.

Prostatic Capsule and Gravitation of Pus.—The prostatic capsule has never been properly studied with the idea of learning from it what are the natural directions in which pus may be directed from the prostate into surrounding tissues. The prostatic capsule is composed mainly of the inner fascia of the levator ani muscle which joins the middle layer of the perineal aponeurosis to cover most of the gland. The capsule is completed by the perineal fascia. This anatomical arrangement of the capsule allows pus that finds its way through the capsule to gravitate into the ischiorectal region or into the perineum; a collection of pus by pressure on the rectum may ulcerate a way for itself into this organ. In cases of ischiorectal abscesses, periprostatic suppuration should always be suspected, and until this can be eliminated other sources of the pus, and especially the conventional explanation that it is due to infectious material which has found its way through the rectal walls, should not be accepted.

Diagnosis of Prostatic Abscess.—The first symptom of prostatic abscess is usually set down in the text-books as the existence of fluctuation on rectal examination. Needless to say there has been pus in the prostate for a good while before this symptom can be detected. As a matter of fact, the condition called prostatic congestion is in most cases incipient abscess formation. Fluctuation should not be waited for, but if possible an incision should be made in the prostate before this symptom can be demonstrated. Careful bimanual examination will usually reveal the existence in one of the lateral lobes of a distinct swelling accompanied by tenderness. These symptoms in a patient suffering with severe pain in the prostatic region, with retention of urine and a febrile condition indicating the existence of an infectious focus, is enough to justify the opening of the posterior urethra through the perineum to search for the abscess.

Important Preliminary Symptoms.—A very significant symptom of prostatic abscess is the occurrence of a large amount of albumin in the urine. When this can not be accounted for either on the score of the quantity of blood present, or pus from some other source, it is almost pathognomonic of nephritis and when present aids materially in determining operation. The reason for the presence of this albuminuria seems to be that congestion of the prostate squeezes serum from the blood which finds its way into the urethra and thence into the bladder. The other important symptom is the difference in the size of the lateral lobes of the prostate that can be felt on bimanual examination, as already pointed out.

Technic of Operation.—When pus exists in the prostate it must be removed, and if the spontaneous evacuation which sometimes takes place be incomplete, an operation will be required for thorough drainage. If pus once finds its way out of the capsule into the periprostatic tissues the case is apt to become extremely complicated and takes a long time to heal. The old prerectal incision undoubtedly enables the surgeon to reach the pus in the prostate without much difficulty. The same thing might be said for the incision through the rectum itself, but no good surgeon considers this route advisable. It has been recognized that the prerectal incision has many disadvantages—the wound is too extensive and, with the rectum just below and the urethra just above, it invites infection. While it opens up the capsule of the prostate, this incision does not prevent the pus finding its way into the urethra. Dr. Alexander considers, then, that Nature's method of opening into the urethra should be followed. Perineal section is made and the prostatic urethra is dilated with the finger. By touch it can be recognized on which side the pus exists and the collection can usually be opened with the finger. A rubber-tube is inserted in the bladder and the collected pus encouraged to drain thoroughly. One of the complications of this method of operating is that epididymitis sometimes occurs. As a rule, however, the patient is out of bed on the fifth or sixth day and feels perfectly well, and all his urine comes through the urethra after about two weeks.

Individualization of Treatment for Enlarged Prostate.—Dr. Bransford Lewis of St. Louis said that it is the custom for physicians to ask what operation is considered most advisable for enlarged prostate. The consideration that underlies this question is entirely fallacious, presupposing that all cases of enlarged prostate can be treated by similar methods. As a matter of fact, each has individual features and requires careful study in order to determine the most helpful method. Dr. Lewis presented a model of a case whose history was as follows: The patient had lived a catheter-life for several years. A surgeon removed the prostate through the perineum, yet the patient received no relief from his urinary symptoms and had to continue the use of a catheter. Dr. Lewis then used the Bottini method of treatment and after it the patient was able to urinate voluntarily. After urination, however, four ounces of residual urine remained. The patient was very thankful for the relief of symptoms.

Causes of Difficulty of Urination.—A cystoscopic examination in this case showed the existence of a collarette of prostatic tissue around the entrance to the urethra at the neck of the bladder, which prevented proper emptying of the viscus. It was then a case entirely unsuitable for prostatectomy, and the Bottini operation had served only to make an anterior notch in the collarette, partially relieving the symptoms, but not permitting complete bladder evacuation. A suprapubic operation was done and the size of the collarette was reduced by the direct application of the Paquelin cautery. The patient made a prompt and satisfactory recovery. He has but half an ounce of residual urine. He urinates four times a day, a full stream, and he is able to urinate freely before a class or a medical society.

The Median Lobe, Ball-and-Socket Valve.—Dr. Lewis then presented the model of a case in which the obstruction to urination was due, not to the enlargement of the prostate itself, but to the fact that an enlargement of the median lobe caused an intermittent blocking of the urethra. Such a case is not suitable for the Bottini operation because the burning of the median lobe does not reduce the obstruction. In this case the middle lobe must be removed by a suprapubic operation. At times the obstruction to urination is due to the existence of a prostatic bar. This must be removed through the perineum. At times a pedunculated tumor causes the obstruction to urination; a catheter slips in very easily and the urethra seems to be perfectly normal. When the bladder becomes distended with urine, however, the tumor completely blocks the entrance to the urethra. The only treatment for such a condition is the suprapubic operation with the removal of the pedunculated tumor.

Frequency of Abscess of the Prostate.—Dr. James Bell of Montreal, in discussing Dr. Alexander's paper, said that he has seen many follicular abscesses of the prostate, especially in cases of posterior urethritis or in old catheter patients, but as a rule the collections of pus had evacuated spontaneously through the urethra. Dr. Alexander's description of the anatomy of the capsule of the prostate seemed to Dr. Bell to make clear a recent complicated case seen in hospital practice. The patient, a young man, was treated overzealously for gonorrhea, the result of which was a retention of urine. The patient became very much emaciated and suffered from febrile temperature which showed the existence of an infectious focus. After a month the abscess opened into the perineum and a sinus appeared over the tuberosity of the ischium; the whole perineum became sensitive. After a time the abscess opened into the rectum; then a perineal section was done and a freer vent given to the pus. Altogether, however, the patient was some eight months under treatment. The case did not come under Dr. Bell's care at a time sufficiently early to enable him to anticipate its complications. Dr. Alexander's case seems to point out clearly how much can be done by early intervention.

Prostatic Congestion and Follicular Abscess.—Dr. Paul Thorndyke of Boston said that follicular abscess of the prostate is undoubtedly often diagnosed as prostatic congestion. The most serious consideration with regard to prostatic abscess is that surgeons usually see it too late. As a diagnostic rule, frequency of urination with strangury, if not easily palliated, should be considered as significant of abscess. Acute swelling of the prostate should not be called prostatic congestion, but should always raise the suspicion of a suppurative condition. The prerectal incision of a prostatic abscess is not a difficult matter because of the ease with which structures can be recognized. Better results, however, can be obtained by Alexander's operation through the perineum and the prostatic urethra.

Forcing and Retention of Urine.—Dr. Thorndyke said that while frequency of urination often led to more serious disturbances of the urinary apparatus, it must not be forgotten that relief of the forcing by tying a catheter in the bladder may save the patient from subsequent complete retention of urine. Dr. Alexander's explanation of the constricting effect of forcing and the resultant increase of passive congestion, with consequent increase of difficulty of urination, shows the vicious circle that may lead to complete blocking of the posterior urethra. In many of these cases retention of urine can be avoided by relieving the bladder through a catheter *à demeure*.

Albuminous Urine and Prostatic Suppuration.—Dr. Tilden Brown said that the occurrence of albuminous urine is undoubtedly a very significant symptom of prostatic suppuration. Dr. Alexander's explanation of its occurrence, *i. e.*, that it is due to prostatic congestion and consequent leakage of serum into the urethra where it is mingled with the urine, is very plausible. All periprostatitis, Dr. Brown thinks, is not necessarily due to conditions within the prostate. He has seen membranous pericellulitis occur in the periprostatic tissues that was undoubtedly due to some other cause. Ischiorectal abscess is frequently due to causes other than spread of suppurative conditions from the prostate. Dr. Alexander's explanation of the anatomy of the prostatic region, however, is almost sure to prove of great help to genito-urinary surgeons in their consideration of these cases.

Diagnosis of Prostatic Suppuration.—Dr. George E. Brewer said that prostatic suppuration frequently fails to give a classical clinical picture. At times there is no history of fever in the case. Sometimes the initial fever has subsided and the vesical irritability has diminished, yet the prostatic suppuration remains. Recognition of the existence of pus is then a difficult matter. Leucocytosis is a significant symptom and its presence in suspicious cases may help the surgeon to decide. Ischiorectal suppuration is not infrequently due to prostatic conditions. Dr. Brewer saw a case recently in which there was no suspicion of a prostatic etiology for the abscess collection in the ischiorectal region. A second operation was necessary, however, and during this a small sinus leading to the prostate was found. Not infrequently multiple abscesses occur in the prostate, in which case the diagnosis symptoms suggested by Dr. Alexander would fail. Both sides of the prostate may be enlarged. While the operation suggested by Dr. Alexander is undoubtedly of service if the case of prostatic suppuration come for treatment early, the old prerectal operation will still probably give more satisfaction in many of the complicated cases.

Prostatic Suppuration Infrequent.—Dr. B. Farquehar Curtis said that abscess of the prostate is not a common affection. He was for three years in charge of a large genito-urinary clinic in which many cases of gonorrhea came for complete treatment, and yet in that time he did not see a single case of prostatic abscess. It is true that this was at a period when gonorrhea was treated by mild injections of the anterior urethra rather than by deep irrigations or meddlesome treatment of the posterior urethra. Perhaps prostatic abscess occurs more frequently at present. Dr. Curtis believes that Dittel's old operation is still the most favorable one for periprostatic suppuration. When no secondary infection has taken place and the pus has not gotten beyond the limits of the prostate, the method suggested by Dr. Alexander is the natural and effective route for the evacuation of the pus. The suggestion is certainly novel and the method is simple. Dr. Alexander deserves great credit for his ingenuity.

Etiology of Prostatic Abscess.—Dr. John Van der Poel said that prostatic suppuration is most frequently due to the gonococcus. This is prone to affect the follicles of the gland rather than the substance of the prostate. As the result of the lowered resistive vitality consequent upon chronic gonorrhea of the posterior urethra, secondary infection of the prostate is liable to take place. The microbes most frequently concerned are staphylococci, streptococci, and the bacillus coli communis. Recently an anaerobic bacillus has been described as occurring in very acute prostatic conditions; this form of prostatic abscess, however, is specific and is apt to be followed by gangrene and the production of very fetid pus. Pseudo-abscess of the prostate, due to infection of the follicles of the gland from the urethra, is apt to be multiple. This condition does not as a rule give many symptoms, nor does it require operative interference. True prostatic abscess should be opened at the earliest possible moment in order to avoid complications, and Dr. Alexander's suggestion as to early diagnosis and treatment will undoubtedly prove to be of the greatest value in this matter.

Bimanual Examination.—In closing the discussion, Dr. Alexander said that bimanual examination was of very great service for the early detection of prostatic abscess. Inequality in the size of the lateral lobes of the prostate can be rather easily detected with one finger in the rectum and another pressing firmly just over the pubis. When the lobes of the prostate are distinctly unequal in size, the presence of some acute prostatic condition may be suspected. If there be other symptoms of pus in this region, as, for instance, fever, uneasiness, frequency of urination and a tendency to force at urination, this finding at a bimanual examination should decide the surgeon to make a perineal incision and relieve the abscess. If at the same time the urine contain more albumin than can be referred to some known bladder or kidney condition, one can be almost certain that an abscess of the prostate exists.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, Held May 6, 1902.

The President, Joseph Collins, M.D., in the Chair.

A Case of Primary Myopathy.—Dr. J. Ramsay Hunt presented a girl of sixteen having a negative family history. One year and a half ago there was noticed a difficulty in pronouncing words and also a nasal twang. A few months later there was some regurgitation through the nose, and it was noted that she did not close the eyes completely during sleep. Examination showed marked deficiency of the muscles of the face on voluntary and emotional innervation. The orbicularis oris and the orbicularis palpebrarum and the zygomatici were chiefly affected. The palatal muscles were motionless. The muscles of the upper arm and shoulder were small. The tendon reflexes were active, but there was no evidence of involvement of the pyramidal tract. The speech mechanism was easily fatigued, articulation becoming less distinct on prolonged effort.

Tumor of the Brain.—Dr. Max Mailhouse of New Haven presented a brain taken from a woman who had been admitted to the New Haven Hospital on March 13th with a history of severe headaches for a year and a half and considerable mental disturbance. Speech was incoherent and muttering. There were exaggerated knee-jerks; also ankle-clonus and increased plantar reflexes. The optic nerves were atrophied and she could only distinguish light. Twitching of the muscles of the eyebrows was observed the first night, and she was so restless as to require restraint. During the six weeks she was in the hospital there were two or three attacks of vomiting. She complained constantly of headache and thirst. On April 14th, when examined by Dr. Mailhouse, there was slight strabismus from weakness of the left internal rectus; the knee-jerks were exaggerated and there was ankle-clonus on both sides. There was loss of vision. Mentally she was tolerably clear. She became more restless and talkative, and the pulse more rapid and irregular; two days before death she became unconscious and died in this condition. The autopsy was made on the day after death. It revealed a tumor in the interpeduncular space; examination of the tumor made it appear that the growth either originated in or soon involved the optic chiasm. The tumor pressed upon the left third nerve and also upon the facial tracts above the pons, causing the spasmodic twitchings of the facial muscles. No report of the microscopical examination had yet been received.

Paralysis of the Serratus Magnus.—Drs. Joseph Collins and I. Abrahamson presented a woman of twenty-eight who had been in fair health up to last November. At this time she had had an attack of suppurative tonsillitis, which was followed by suppuration of the glands at the posterior border of the sternomastoid muscle. These were incised and much pus evacuated. About seven weeks afterward the shoulder was noticed to project upward and it was the seat of a throbbing pain. When seen, the left scapular presented a wing-like appearance and what appeared to be an isolated paralysis of the serratus magnus muscle. Some of the fibers of the supraspinatus and of the infraspinatus showed slight reaction to the faradic current and some slight atrophy. There was a large linear post-operative scar along the upper posterior border of the sternomastoid muscle. There was some enlargement of the glands on the left side of the neck. The diagnosis was based upon the position of the scapula while at rest, on the peculiar limitation of movement when the arm was brought forward at a right-angle, on the absence of sensory disturbances and of symptoms pointing to spinal origin and on the presence of degeneration reaction. The lesion was evidently a post-infectious neuritis involving the posterior thoracic nerve, probably that portion in the body of the scalenus. The chief features of interest were its peculiar etiology; its occurrence in a female; the absence of trauma and of any of the ordinary causes; its late recognition; the change in the position of the scapula when at rest; the presence of scoliosis, as had been observed by Stromeyer in a few cases.

Dr. W. M. Leszynsky said that most of these cases of serratus magnus paralysis were due to pressure or to progressive dystrophy, but he had shown a case to this society in which it had followed an infection—pneumonia.

Atypical Syringomyelia.—Dr. Joseph Collins showed a case which he had diagnosticated as syringomyelia. The patient was a stationary engineer, fifty-seven years old, who had lived a temperate and healthy life, not exposed to syphilitic or inorganic poisons. Three years ago he noticed that he tripped easily, on going down stairs, and that he was getting clumsy in the use of his feet. About the same time he remarked that the little and ring fingers of both hands were becoming stiff, as he termed it. He found difficulty in using these fingers dexterously and in appreciating objects coming in contact with them. Soon these fingers became deformed, a flexor deformity of the second and third phalanges, which was gradually progressive and which was dependent upon atrophy of the hypothenar muscles and the last interossei. At the same time the loss of sensibility in the ulnar distribution progressed. About a year ago a slight sore developed on the ball of the right foot, now a typical perforating ulcer. The patient presented the following: (1) Atrophy of the hypothenar and the last interossei muscles and consequent deformity; (2) glossiness of the skin of the hands; (3) analgesia and thermoanesthesia, and partial tactile anesthesia in the little fingers and the ulnar halves of the ring finger; (4) thickening of the ulnar nerves, rendering them palpable; (5) increase of mechanical irritability of the muscles of the upper extremities; (6) typical perforating ulcer in the ball of the right foot; (7) analgesia and thermoanesthesia of the toes and the outer half of both feet; (8) slight exaggeration of the tendon jerks in the lower extremity; (9) no deformity of the spine and no symptoms referable to the cranial nerves; (10) no disturbance of the sphincters or of the sexual function. Dr. Collins said that the case was not a typical one of syringomyelia, but that diagnosis seemed more likely than any other. The condition was a progressive one.

A Case of Raynaud's Disease.—Dr. B. Onuf presented a young man with Raynaud's disease that had existed for about two years. Sensation was normal during the attacks. There was a history of rheumatism of the joints. He was a sailmaker by occupation and in his work the tool used caused pressure on the right palm. The urine showed an abundant deposit of urates. The condition had not been improved by any method of treatment so far employed.

Mental Dissociation in Depressive Delusional States.—Dr. Ira Van Giesen was the author of this paper, which, he said, represented some of the work formerly done in the New York State Pathological Institute. The subject of the report was a Russian of twenty-six having a good family history. In February, 1900, he had begun to suffer from insomnia, headaches and loss of appetite, and had become despondent. The general health had rapidly deteriorated and a local physician, on examining him, stated that his trouble was largely indigestion, and that there were "lumps" in the bowel. This was the foundation of a delusion which the patient fondly cherished. There was also a belief that there were worms in the intestine which worked upon the lumps and broke them up into minor lumps, and sent the latter throughout the body. The patient believed that he was rescued from his dire distress by three agencies, *viz.*, the spleen, the soul and the veins, the soul being the scavenger and the spleen the director. When the attention of the soul was distracted this work was not well done. As might be expected the patient was extremely depressed and his physical condition suffered. He could only speak readily on the all-pervading subject of his delusion. The loss of attention was marked except as regards the systematized delusion. No gross motor disturbances were present. The patient reacted slowly to external stimuli. There were no sensory disturbances, no hallucinations, and no tendency to self-destruction. He could fully realize his environment and his relations to space and time. As soon as he passed into hypnotic trance a metamorphosis almost instantly occurred, the patient passing from intense depression to a state of great exaltation. Despite this the focal delusion persisted and appeared to be far better organized. This clearly pointed to the fact that either the state of depression was one of secondary formation or the delusion, being secondary in its origin, had gained sufficient strength to stand by itself, even after the emotional basis had been withdrawn. The latter alternative seemed to be the more probable. In his trance he could vividly remember all that had taken place in his waking life, and he could recall fairly well what happened while in the trance. Later on the patient at one time passed into a deeper trance and then passed from a state of inexpressible delight to one of grave composure. In the last trance personality he could remember all the experiences of the other trance personality and of the waking personality. The relation of these three personalities were described diagrammatically by three concentric rings. The central one was the melancholic personality, and outside of this were successively the rings representing the first and second trance personalities. Of the three personalities, the waking was pathological. The first trance personality was exalted, while the second trance personality approached closely to the patient's healthy condition. The course of these personalities resembled quite closely what was observed in circular insanity. These alternating personalities were, however, ephemeral. Soon the first personality shrunk and finally disappeared altogether. In the course of time the first trance personality disappeared, and never returned. The mood of the second trance personality then lost some of its former seriousness. The tendency was for the intermediate personalities to disappear and the last one to become the dominant one. The process of evolution of species in general was one great illustration of the process just described. Throughout all of these transformations the central delusion remained unshaken. The great assimilating power of this delusion was wonderful. Various suggestions were given to this patient; although they were designed to break up the nucleus of the delusion, they were turned about by the patient and fed into this systematized delusion. It was necessary to follow the patient in his delusion and play into the hands of the latter in order to make the suggestion take root. Direct suggestion during deep hypnosis was the usual method of breaking such a strong delusion, but the objection to this method was that it was apt to be only temporary in its effect. The method of emotional substitution was especially valuable in a case of this kind. Some unimportant sensory changes were first attempted, as for example, the abolition of the unpleasant thermal changes in the "lumps," but they were only partially successful. The effort was then made to fuse the different personalities. During hypnosis dreams were suggested to the patient, with the object of effecting changes in the central delusion. For example, in one of these dreams his father told him that these lumps would go away. These dreams impressed him deeply though slowly. When the good dreams had become dominant the spleen and soul began to drop out, and then the galvanic current was substituted for the soul with great benefit. Small spots were next substituted for the large lumps. The spots were gradually confined to certain definite areas instead of being vaguely disseminated. The patient's melancholia finally disappeared completely and he has now resumed his original vocation. The case was regarded as a triumph for this mode of treatment and as a type of many other cases now in the State Hospitals for the Insane.

Dr. Mary Putnam Jacobi asked whether the transition of the two personalities had occurred spontaneously or had been brought about by some special maneuver.

Dr. Henry Rafel asked if there was any other case on record in which hypochondriasis had been cured in this manner by hypnosis.

Dr. Van Giesen said that the paper had been prepared by his former associates at the State Pathological Institute. The transition of the personalities had occurred spontaneously. He was not sufficiently familiar with the literature to answer positively the second question. If hypnosis had been used in the ordinary way the result would have been only transient benefit; a permanent cure had been effected by a thorough understanding of the whole mechanism of hypnosis. This patient had been cured eighteen months ago.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held May 12, 1902.

The President, Andrew H. Smith, M.D., in the Chair.

Etiology, Pathology and Treatment of Joint Diseases.—Dr. A. M. Phelps read the paper of the evening. He expressed the opinion that joint diseases are due primarily to trauma and secondarily to infection, whether tuberculous, syphilitic, or resulting from the invasion of such morbific agents as the streptococcus, gonococcus and pneumococcus. He considered struma a state, not a disease, and generally inherited. If a joint has received an injury and inflammatory action has been set up the bone at the seat of the injury is also infected.

A question of great interest is as to the possibility of rupture of the internal lateral ligament of the knee-joint in injuries to the joint. It was claimed by most authorities that such rupture not infrequently takes place, but Dr. Phelps has made a series of experiments on the cadaver which showed that, even although sufficient violence was employed to fracture the bone, it was impossible to rupture the internal lateral ligament. He presented a number of specimens which showed that such fractures had been caused without injury to the ligament. There is often a dual inoculation, such as the tuberculous and the streptococcal. The disease grows as a mold, and the bone perishes from malnutrition, the blood-supply being cut off.

Mechanical Treatment.—Mechanical treatment, Dr. Phelps believed, should be commenced just at soon as the diagnosis of joint inflammation or disease has been made. If there be an acute attack, with great pain, it is advisable that the patient should be treated in bed for a few days until relief is obtained; but as soon as the pain has subsided and the deformity has been overcome, mechanical support should be applied. The object of the treatment is to restrict every motion of the joint and to effect extension in proper lines for the relief of intra-articular pressure. This pressure, which is produced by muscular spasm, is likely to result in destruction of the entire joint, necessitating either amputation or excision. The manner of application of fixation and extension is determined by a study of the mechanics of the various joints and of the action of the muscles involved. As they sustain the weight of the body, the joints of the lower extremeties require very much more protection than do those of the upper extremities. Braces for lower extremity joints should prevent the patient from stepping upon the foot, as by so doing the articular surfaces would be driven together and more inflammatory action and disease result. It is therefore advisable that any form of apparatus designed for the lower extremities, especially in the case of children, should extend at least 2½ inches below the bottom of the foot, and should have a point of impact against the tuberosity of the ischium. By far the best supporter is one that has for is upper point of impact a steel ring properly padded. In the case of an adult with intelligence enough not to step upon the diseased limb, other appliances may be used.

Hip-joint Disease.—In hip-joint disease two lines of extension are absolutely necessary for the relief of intra-articular pressure. One of these must correspond with the axis of the neck of the femur because the glutei group and adductor muscles which are affected by spasm, act upon a line with this axis. The other must correspond with the axis of the shaft, because the iliacus internus and psoas muscles which are also in a state of spasm, act on a line with the latter axis. All patients with deformity should be put to bed, with extension in the line of deformity and at right angles to that line. In fact, the treatment of any case of joint-disease should be begun by overcoming the deformity, as a straight brace cannot be successfully applied to the deformed limb. There is hardly any deformity in joint disease which cannot be best overcome by extension in bed and by forcible means under anesthesia. After the deformity has been overcome, Dr. Phelps uses a lateral traction or fixation brace, devised by himself, which is perfectly straight and which, when properly applied, will prevent future deformity. The theory that longitudinal traction relieves intra-articular pressure is erroneous. The glutei and adductor groups of muscles are pulled upon, and, by the direction of their origin, any exertion must necessarily force the head of the bone into the socket. Cases treated with this splint seldom recover with ankylosis. It is very important to recognize the fact that no case of hip-joint disease recovers inside of two years, and 75 per cent. of the cases brought to Dr. Phelps have abscess as the result of premature removal of the brace. After the patient has worn the brace for eighteen months or two years and the muscular spasm and the disease have subsided, a walking brace should be applied, which protects the child from injuring the limb if he falls. Joints are frequently seen with all the symptoms of inflammation, which recover within a few months; but this is simply a transitory condition due to normal inflammation, and if protected such joints will recover. If infection take place, however, disease occurs and the abscess results, tuberculous, purulent, gonorrheal, or pneumococcal, and frequently surgical intervention is necessary.

Other Joint Diseases.—In knee-joint disease. particularly in children, he regarded Thomas' as the best brace. By adding straps, extension can be made with it; here, as well as in hip-joint disease, extension must be made in two lines in order to counteract muscular spasm. Sayre taught many years ago that two lines of extension should be applied, one longitudinally and the other at right angles, at the head of the tibia. The only objection to Sayre's knee-brace is that, unless great care be used in adjusting it, it is apt to interfere somewhat with the circulation of the limb. In ankle-joint disease or inflammation Dr. Phelps' method is first to envelop the foot and leg in plaster of Paris; while the plaster is setting, extension is applied and the cast carefully molded to the part. Thomas' brace is then applied and the child is allowed to walk upon the brace with a high shoe. In the adult, however, he prefers to use a brace, which he devised a number of years ago, which absolutely fixes the joint and extends the foot. Plaster of Paris is undoubtedly the best fixation appliance for mediotarsal joint disease. In diseases of the shoulder-joint he employs a pad in the axilla and passes adhesive straps around the arms and body, thus throwing the head of the humerus away from the glenoid cavity (into which the muscles tend to force it) and absolutely fixing it. Plaster of Paris is the best dressing in elbow-joint and wrist-joint disease, except when extreme muscular spasm is present. It is very difficult to make extension with plaster of Paris at the wrist, and for this reason Dr. Phelps employs a fixation brace. In disease of the spine the same law applies as in the treatment of joint disease of the lower extremities, and he has found no apparatus as efficient as the plaster of Paris and aluminum corset, made while the patient is in a position of suspension. The aluminum corset is light, durable and cheaper than any other when the patient requires treatment for two or three years, as is usual in Pott's disease. He exhibited a padded board, shaped to correspond with the patient's figure, which he said was a very satisfactory cheap substitute for Sayre's wire cuirass for children of three years and under, in whom, on account of the narrowness of the hips the plaster of Paris jacket was inapplicable.

Operative Treatment.—The general position taken by Dr. Phelps is that mechanical treatment should always be employed from the beginning to the end of any joint disease, and that every abscess should be attacked as soon as a diagnosis is made. Every joint condition attended with an abscess should be immediately operated upon for two reasons: First, for exploring the joint. The largest and most painful abscess is not infrequently the most benign and attended with the least amount of bone disease, while small abscesses are often found to have originated from foci of disease in the bone requiring immediate operation in order to avoid excision. In the second place (and this applies particularly to hip-joint disease), the head of the bone is very frequently found separated from the neck, and only when the surgeon has put his finger into the joint can he determine the advisability of doing a complete excision, if requisite. Any abscess, whatever its nature, should therefore be immediately opened and cleansed out. The curette should be freely used when this is practicable, but if the disease be so extensive that it cannot be removed by the scoop, the tissues which have been destroyed by disease should be removed. The joint should then be thoroughly flushed out with a 5-per-cent. solution of carbolic acid or a 2-per-cent. solution of bichloride; after which it should be wiped dry and injected with pure carbolic acid, the latter being allowed to remain from one to two and a half minutes. Finally, the joint should be washed out with 2-per-cent. carbolic acid, and, in deep joints particularly, glass speculum drainage should be used. Indeed, in all cases of bone operation in deep structures this form of drainage should be employed instead of packing the wound. In abscess of the wrist and in hip-joint disease particularly, operation at the earliest possible moment was urged. When the hip-joint is opened for exploration, and the epiphyseal lines of the acetabulum are found to be infected, excision should be practised whether the neck and head of the femur be diseased or not, for the reason that free drainage is prevented by the condition. Such cases invariably go on to the formation of other abscesses, and amputation or excision must eventually be performed. When an abscess has discharged into Scarpa's triangle, it should never be opened at that point, but the incision should be made along the anterior border of the femur, and the abscess washed out with pure carbolic acid. In extensive disease of the bones of the knee in children under fourteen years of age, nothing but curetting should ever be performed, and this may be repeated from time to time. The capsule of the joint should be freely incised, and a flat piece of gauze drawn through from side to side, after washing out and cleansing. In tarsal disease with suppuration in children, an abscess will frequently be found involving one of the tarsal bones. The adjacent bones should also be examined in order to discover whether they have become infected. Dr. Phelps said that he had frequently removed every bone of the tarsus, including the astragalus, leaving the periosteum of each bone and thoroughly cleansing out with carbolic acid and alcohol. Perfect reproduction of the bones has followed in a large proportion of cases (from 60 to 70 per cent).

Single Joint Disease Never Due to Rheumatism.—In conclusion, he expressed his conviction that there is no such thing as single rheumatic joint disease. If joint disease be due to rheumatism, more than one joint will become affected. Every single joint disease is either purulent, tuberculous, gonorrheal, pneumococcal, or is due to some central nerve lesion. If, after one joint has become infected, others are subsequently attacked, it is presumptive evidence that such joints are secondarily infected from the original foci of disease.

The Importance of an Early Recognition of Disease.—Dr. Reginald H. Sayre thought the most important thing was early recognition of the conditions present, so that the affected joint could be provided with protection and rest at the earliest possible moment. It is the failure to detect the first indications of joint disease which is responsible for most of the serious cases with which the orthopedic surgeon has to deal. Patients were often brought to him who, it was stated, were *threatened with* Pott's disease or hip-joint disease, when in reality the pathological process had already been going on for months. In this way much valuable time is lost. It is not infrequently the case that the first positive discovery of the disease is made by the mother of the patient, who, for instance, notices that her child had a knuckle on its spine. Yet long before symptoms existed which, if properly interpreted, would have led to an early diagnosis and successful treatment in the initial stage. As long as there is a simple tuberculous infection to be dealt with, the patient is safe; but when a mixed infection has occurred there is always danger of a fatal issue. A good deal depends on the location, and unless, therefore, one feels sure of getting a clean result, it is preferable to leave a tuberculous abscess alone. The points made by Dr. Phelps in regard to the intelligence of patients and the frequent necessity of meeting lack of intelligence on the part of patients and of the parents of children under treatment, he thought well taken. It is often necessary, by means of mechanical contrivances, to protect patients against themselves, because they fail to grasp the principles which the apparatus prescribed is designed to carry out. If a number of joints be implicated, his experience has led him to suspect the existence of syphilitic disease in connection with the tuberculous, especially in children under two years of age. In the majority of simple tuberculous cases only a single joint is affected. If syphilitic infection be present, there is a strong probability of a more rapid and better recovery than otherwise.

Etiology.—Dr. Joseph A. Blake said that, while it is certainly possible for an infected gland to discharge directly into the veins, he did not think this is the usual method of infection. In all his experience with tuberculous glands he has never observed such an occurrence. In regard to the drainage of abscesses, he agreed most heartily with Dr. Phelps as to the deleterious effects of gauze packing. After appendicitis operations, when this was employed, he has often seen the temperature jump up, instead of going down. His own practice was to use rubber. In regard to the impossibility of rupturing the internal lateral ligament, it seemed to him that Dr. Phelps had taken pretty strong ground. It is very common to say that rupture of the ligament has occurred. In injuries of the knee it might not be absolutely torn through, but he believed that its fibers were sometimes divulsed. He thinks that a partial rupture of the ligament is possible.

CHICAGO ACADEMY OF MEDICINE.

Stated Meeting, Held March 14, 1902.

The President, Daniel R. Brower, M.D., in the Chair.

Degenerative Bulbar Paralysis.—Dr. Alfred C. Cotton reported a case of this disease. The patient, Kitty M., aged eleven years, first came to his clinic January 17, 1902. Mother living and well. Father died of pneumonia. Her paternal grandmother developed some form of paralysis after child-birth. Her paternal grandfather was paralyzed late in life and had some disturbance of speech which disappeared before death. Birth and early history negative; diseases of infancy pneumonia and diphtheria, which latter disease she had twice. Early in September her mother detected slight difficulty in swallowing and some defect in speech. About the middle of September she was sent home from school with instructions to have her eyes tested, and she was given glasses for astigmatism. Drooling and speech defects led to a consultation with a throat specialist, who advised the removal of postnasal adenoids. She had occasional fits of obstinacy and cried frequently; *i.e.,* she was emotional, but showed no evidence of impaired mentality. Speech and deglutition became increasingly difficult, so that the hand was occasionally employed to retain food in the mouth.

The girl is of average size for her age, but somewhat pale and poorly nourished. The expression of the face, fallen lip and drooling mouth, first arrest attention. She answers questions indistinctly and laboriously. The speech defect shows inability to pronounce labials and dento-linguals. She cannot wrinkle the forehead, elevate the eyebrows, close the eyes completely, purse the lips, or smile. The tongue cannot be protruded beyond the teeth, nor raised to the roof of the mouth. It is thickly coated, plainly shriveled, and lying placidly in the floor of the mouth, with occasional flickering tremors. The uvula and palate show some anesthesia. The voice is monotonous, and of nasal quality. The mouth is full of saliva which pours over the pendulous lip. The child masticates food slowly and swallows with marked difficulty, at times choking and coughing. Fluids do not regurgitate through the nose, nor is there any history of this symptom. The respiration is shallow, and under excitement or exertion becomes slightly snoring. She also snores while asleep. Examination of the ocular fundus and ear gave negative results. The pupillary reflex is normal. The range of ocular movements is somewhat restricted toward the right. Slight horizontal nystagmus is at times noticeable. She cannot close the eyes completely, prolonged effort causing parallel deflection upward and to the left. Eyes are constantly suffused, and there is conjunctival anesthesia. The general muscular system shows but little wasting. Patellar reflexes normal and coördination good. Electrical response to both galvanism and faradism normal, with the exception of the facial muscles, which show the reaction of degeneration. A.O.C.= 2.5 M.A. C.C.C. = 4.5 M.A. A.C.C. = 4.5 to 5 M.A. There is no response to faradism (the strongest current) in facial muscles. No anesthetic areas, either thermal or tactile, were found except of palate and conjunctiva. No tremors were present except occasional fibrillar twitchings of tongue and facial muscles. Taste was not affected. There is a systolic mitral murmur. The child has been under observation for seven weeks, and during that time the highest and lowest temperatures have been 97.4 and 100.4° F., pulse 76 to 120, and easily disturbed; respiration 20 to 26. She has lost five pounds in weight, with perceptible diminution of muscular vigor. During the last week the gait has shown some uncertainty, and there is increasing tendency to sleep during the day. All the plegic symptoms have steadily intensified since the first observation.

Associated neuritis of bulbar nerves may be ruled out.

The familiary or hereditary type of the disease may be excluded for want of corroborative history; her brothers and sisters being free from any suggestion of similar trouble. There is no evidence of any involvement of the cord, such as spasticity, increased muscular irritability, nor atrophy. Lack of sensory disturbances, as analgesia, thermic anesthesia, and also lack of muscular atrophies may exclude syringomyelia. The persistence of the patellar tendon reflex, absence of crises, and the Argyll-Robertson pupil dismiss tabes from consideration. Although there is a slight nystagmus, the intention tremor, scanning speech, rigidity and exaggerated knee-jerk of multiple sclerosis are wanting. If, as it has been claimed, an isolated area of a developing multiple sclerosis has its seat primarily in the medulla, and produced the symptoms seen in this patient, may it not be time (seven months) for symptoms of other sclerosed areas to manifest themselves?

The extensive involvement of the facial nerves seen in this case, though not of itself a part of the symptom-complex of true bulbar paralysis, still occurs with sufficient frequency not to jeopardize the diagnosis, providing the pathognomonic symptoms be present.

Dr. James G. Kiernan said that aside from the mere diagnosis of bulbar paralysis the local condition resulting in it should be considered. There was a growing tendency to take into account states which were considered by the older clinicians as auto-intoxications, or asthenic bulbar paralysis. Anyone who had followed the bulbar paralytic states, or the conditions presenting the symptoms in these children for a time dating back many years, would realize that there were numerous states in which, unless terminated early in death, patients recovered gradually and the condition disappeared. There were states here, as in many other neuroses, which, whether secondary to the toxins of germ disease or to autotoxic states, were dependent upon a biochemical lesion that did not necessarily effect a neuritic change. Every alienist could recall certain psychoses of an acquired type which presented psychic symptoms of locomotor ataxia or of paretic dementia, accompanied by cerebral disturbances of motor and sensory type, temporary in character. In locomotor ataxia and in paretic dementia every one of the symptoms of bulbar paralysis occur temporarily and disappear. On logical analysis it was clear that this temporary condition was due more to toxemia which might or might not be of an autotoxic state, but which was certainly temporary and which improved after a time. The same was true of psychoses which occurred in children. He had been puzzled by a certain class of cases among children of a paralytic type in which encephalic symptoms of bulbar disturbance were present, but in which the symptoms with improved nutrition and improved elimination disappeared. It seemed to him that the comparatively good outcome (which occurred in a by no means small proportion of these cases, so far as the individual symptoms were concerned of the allied conditions occurring in paretic dementia and in locomotor ataxia, in which the toxin and the toxemia played a part in symptom development) justified a distinction between a gross lesion and a temporary biochemical lesion. Even in organic cases a large amount of seeming organic disturbance was often due more to temporary shock, producing mental inability to use certain functions, than to actual loss of power. Even in hemiplegia, in which there was an apparent deep-seated symptom, much of the loss of power was not due to the destructive lesion, but to secondary disturbance produced by it. The same condition obtained in a number of sensory conditions which were peculiarly apt to occur in childhood. Dr. Cotton probably had seen after scarlet fever, after cholera infantum, and after other allied states, conditions which simulated very strongly the condition shown in the case, and which conditions had a good prognosis. In childhood a biochemical lesion might express itself much more seriously than a destroying organic lesion, might therefore be long-lasting, and yet might ultimately recover. The hearing in the present case was much better than one would first anticipate. Certainly bone conduction was in fair condition; so was general air conduction. In dealing with these defects, it must be remembered that in a child the inhibitory element, resulting from the child's attempt to determine its state, played a greater part than in an adult. The query naturally arose whether there were an organic lesion or whether there were merely an asthenic bulbar state.

Dr. E. S. Talbot said the facial bones of the child were markedly arrested in development. The bony structure of the chest itself was also notably arrested in its development. Where there was a marked arrest of development of the bones of the face, there was often such a condition of the chest-walls.

Dr. William J. Butler said that the symptoms had markedly increased since the patient first came under observation. There was only a small space left between the upper and lower eyelids, but now there is one-quarter of an inch. The child could not talk very clearly before, but still it was possible to understand her; now what she says is hardly intelligible. The voice had become much more feeble and was quite hoarse. He did not think the impaired hearing was associated with the present trouble. The child had been somewhat deaf for three years, according to the statement of the mother. There was nothing with which the atrophy of the tongue would correspond other than bulbar paralysis. As to the prognosis, he was inclined to differ from Dr. Kiernan. He thought that there had been actual degenerative changes, as the condition has been steadily progressive.

Dr. Daniel R. Brower considered the facial paralysis due to a destructive lesion, either in the nucleus or in the course of the nerve, because the facial muscles would not respond to faradism, and they showed the reaction of degeneration also with galvanism. The child had tongue atrophy and tongue paralysis. There was some disturbance both of respiration and circulation, yet the foundation of it all could be attributed to the diphtheria toxins. In his experience paralyses, the product of diphtheria toxins, were by no means as unfavorable as were paralyses from other causes. He was not disposed to regard the case as having an entirely unfavorable prognosis.

Dr. Butler said that the symptoms did not develop until some time—perhaps three or four months—after the diphtheria.

Dr. Brower had met with diphtheria paralysis in which there was a considerable interval between the acute symptoms and the paralytic development. There was a little uncertainty as to when the symptoms began.

Dr. Cotton stated that, according to the report of the mother, the symptoms were noticed when the child went to school in September. On one or two occasions in August the child made a noise during mastication and there was difficulty in swallowing. Shortly after this the mother observed that the child's speech was thick. She directed the child to keep things out of her mouth, but the child assured her that her mouth was empty. The attack of diphtheria occurred in April; but it was not until about September that there were indications of tongue paralysis. There had been some discussion between his associates and himself as to the extent of the impairment of hearing. The first time he thought the child's apparent deafness was largely due to her embarrassment. The next time he examined her she heard with some difficulty, but since then she heard quite readily, and the nurse said the child undoubtedly read from his lips. The mother had noticed the child's impairment of hearing two or three years ago. Until to-night he had not seen the child for a week, but during that time the disease was markedly progressive. The child was losing muscular tone rapidly; she was becoming generally asthenic, and in every way was getting worse. She had lost at least five pounds in six weeks. He brought the child to the Academy for the purpose of getting the opinions of the Fellows. He wished he could be as sure as Dr. Kiernan in giving a favorable prognosis. Personally, he thought the outcome of the case was extremely discouraging.

BOOK REVIEWS.

A PRACTICAL MANUAL OF INSANITY FOR THE MEDICAL STUDENT AND GENERAL PRACTITIONER. By DANIEL R. BROWER, A.M., M.D., LL.D., Professor of Nervous Diseases in Rush Medical College, etc., and HENRY M. BANNISTER, A.M., M.D., Formerly Senior Assistant Physician, Illinois Eastern Hospital for the Insane. W. B. Saunders & Company, Philadelphia and London.

THIS volume deserves very well the name of Practical Manual which has been chosen for it. It contains in its four hundred and twenty pages perhaps as good a comprehensive treatment of the subject of insanity as can well be put into the hands of those who know little of mental diseases. The book has the air of being written by men accustomed to teach. There is very little that is drily technical and much that is interestingly practical. The chapter at the end of the book on the method of examination of persons supposed to be insane contains in its five pages an excellent résumé of a difficult subject. The chapter on the ethics of insanity is perhaps not quite as complete as it should be for the importance of this subject, but then condensation has evidently been a constant desideratum in the making of the book.

The borderland and episodic states of insanity, the obsessions, phobias and impulses, are treated in a thoroughly sympathetic vein that shows the subjects to have been well studied. Such information as to the trophic change in the insane with regard to the fragility of their bones, which is sometimes observed, ought to be borne in mind by every physician. The ribs especially of such patients may break under very inadequate provocation. Campbell found that while the normal breaking strain of ribs is from 62 to 65 pounds, in paretics it averages only about 44 pounds and in female senile dements it may be as low as 11 or 12 pounds. "In paresis, the other long bones may be correspondingly fragile and probably from the same pathologic conditions that have produced a similar state of the bones in some tabetics."

On the whole, Brower and Bannister's book promises to find a place for itself among the medical manuals of special use to students and practitioners.

DISEASES OF THE UPPER RESPIRATORY TRACT; the Nose, Pharynx and Larynx. By P. WATSON WILLIAMS, M.D. (Lond.), Physician in Charge of the Throat Department at the Bristol Royal Infirmary; Physician to the Bristol Institute for the Deaf and Dumb. Fourth Edition. Illustrated. Longmans, Green and Co., New York, London and Bombay.

INASMUCH as this is the fourth edition of Dr. Williams' hand-book a detailed critique may be dispensed with and it will be sufficient to give it in general terms the commendation it very highly deserves. It is in every sense a practical treatise, simple and concise, yet adequate and affording information on every point likely to come within the needs of the practitioner. The arrangement is logical and systematic and the table of contents and index are comprehensive, so that as a work of reference it is convenient, while the relegation of matters of detail to a smaller font of type makes it especially easy to gain the important facts quickly.

Having thus cavalierly dismissed the scholastic side of the work we cannot but be a little more explicit in praising it from a mechanical standpoint. The illustrations, which are of such importance in a book on this subject, are both accurate and well executed, with the exception perhaps of the rough sketches from the author's note book, which we are accustomed to find in books of British origin, and which for the most part, as, for example, those on pages 100-196 and 197, do but little to elucidate the text. The colored plates are abundant and true to Nature, but the most pleasing and instructive of all are the stereoscopic photographs of patients and of anatomical preparations which represent an innovation that will no doubt have many imitators. A simple stereoscope accompanies the volume and with its aid the various dissections, etc., present a most realistic effect and may be studied with distinctly more satisfaction than ordinary cuts. The scheme is so simple that it seems strange it was not thought of long ago, particularly in connection with text-books on anatomy in which the plan would prove particularly advantageous. We compliment the author on his ingenuity.

BOOKS RECEIVED.

The MEDICAL NEWS *acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the* MEDICAL NEWS *will shortly appear.*

OPHTHALMIC MYOLOGY. By Dr. G. C. Savage. 8vo, 589 pages. Illustrated. Published by the author, Nashville, Tenn.

MANUAL OF CHILDBED NURSING, WITH NOTES ON INFANT-FEEDING. By Dr. Charles Jewett. 12mo, 84 pages. Fifth Edition. E. B. Treat & Co., New York.

TRANSACTIONS OF THE AMERICAN CLIMATOLOGICAL ASSOCIATION FOR THE YEAR 1901. Vol. XVLL. Philadelphia, 1901.

A REFERENCE HANDBOOK OF THE MEDICAL SCIENCES. New Edition. Edited by Dr. Albert H. Buck. Vol. IV., Erg.-Inf. Quarto, 872 pages. Illustrated. William Wood & Co., New York.

THE DIAGNOSIS OF SURGICAL DISEASES. By Dr. E. Albert. Translated by Dr. Robert T. Frank. 8vo, 419 pages. Illustrated. D. Appleton & Co., New York.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. 80. NEW YORK, SATURDAY, JUNE 7, 1902. NO. 23.

ORIGINAL ARTICLES.

THE ADVANTAGES OF EARLY SURGICAL INTERVENTION IN BORDER-LAND CASES.[1]

BY ROSWELL PARK, A.M., M.D.,
OF BUFFALO, N. Y.;
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It is by no means an easy task for one who confines his researches and his clinical work within as narrow lines as does the writer to prepare a paper for an occasion like this, which shall be of interest to a large number of experienced general practitioners. It has been therefore with no little hesitation that I have selected as my topic "The Advantage of Early Surgical Intervention in So-called Border-land Cases." The term has crept into such common use of late that no definition need be attempted of the cases which should be placed within this so-called borderland. The physician, as such, has had occasion many a time to complain of the gradual encroachment of the surgeon upon what he has considered his own territory, and internists have seen themselves pushed, as it were, from one part to another and have been compelled to sit almost idly by and see the gradual invasion of organs, one after another, which until recently were exempt from the surgeon's manipulations. Some feeling has even crept up between the camps of their respective followers and not a few expressions of jealousy have been voiced in journals and in public meetings regarding this unexpected and, to the physicians, undesirable invasion. But we, as conscientious men, may well agree to disregard all other considerations save the welfare of the patients themselves, and we may at the same time, to mutual advantage, rehearse some of the reasons for this encroachment and inquire with solicitude regarding them.

Another aspect of this same old dispute was voiced but a few months ago when Dr. Fitz[2] of Boston read before the New York Academy of Medicine an admirable address on "Some Surgical Tendencies from the Medical Point of View" in which he took a position, in which doubtless he is most consistent and most sincere, which well illustrates the honest physician's point of view. In this paper he drew rather unfavorable comparisons between medical and operative treatment of certain cases commonly regarded by physicians as hopeless, and alluded rather pointedly to the fact that death not infrequently results from operations, or that, if relief be thereby afforded, it is often disappointingly short, and that sometimes the last state of these patients is worse than their first. He acknowledges that general recognition of this fact has led the surgeon to request the earlier transfer of these cases, not only at a time when the disease is not so far advanced, but even before a diagnosis is made and while the physician is still awaiting developments. In corroboration of his view he presents a table of ten years' work done in the Massachusetts General Hospital, showing that in from 60 to 90 per cent., varying according to the year, of exploratory laparotomies there had resulted failure to relieve or to cure.

His statistics are plain and undeniable and yet it seems to me that such argument is a complete *non sequitur*. As a surgeon I would not hesitate to say that nearly all, if not all, of these cases should have been explored much earlier than was done, and that had the Boston surgeons applied the abundant resources of their art early the figures would have been notably altered. It is because I believe that Dr. Fitz voices the sentiments of a large number of general practitioners, who take but little interest in general surgery, that it is my avowed purpose to take the other side of this controversy and present numerous illustrations of not only the advantage, but the inestimable importance of early surgical intervention in these cases, as contrasted with the disadvantages of late attack.

Let us take the general operative surgery of malignant disease in any surgically accessible part of the body. The best surgeons of to-day believe that cancer is a local disease, at least in the beginning, probably an infection, and that, if radically attacked while still a local lesion, it can often be cured, the proportion of cures depending on the early date and thorough character of such operation. Obviously the difficulty is to make an early diagnosis and to secure the consent of patients at a favorably early date; nevertheless, the truth of these statements is so positive that I would not hesitate to lay it down for general guidance, as I teach, that *a well-founded suspicion of cancer justifies an operation for its determination and relief.*

If to any fair-minded man were submitted the following question, "Which is the best in the long run: To make an occasional unnecessary exploration, or to counsel delay until malignant disease is easily recognizable, and when it is too often too late?" I do not believe there would be any doubt as to the reply.

Let us take Dr. Fitz's own presentation of the questionable utility of gastrectomies, or of Kraske operations for cancer of the rectum and, conceding the questionable propriety of these measures, face the condition squarely. Has not every such case probably passed through the hands of several physicians, and have not these gentlemen lost valuable time in studying it for diagnostic purposes and then dallied and delayed with drugs? Every case that has passed on to a point where such desperate expedients need be resorted to is of itself a reflection on the judgment of the physicians who have failed to propose early surgical relief. Highly, then, as I esteem the talent and diagnostic skill of men like Fitz, I must nevertheless take issue with them on their arraignment of us in these hopeless cases and claim that the onus is on those who wait until they are hopeless before proposing surgical intervention. At the same time I thoroughly agree with him that harmful operations should be avoided, that we should always abstain from harm-doing, and that we should cultivate accuracy in diagnosis and knowledge of pathology, since by these "the surgeon will become a better adviser," though "the number and variety of his operations" will, in my judgment, not be lessened but extended. If my own experience, for instance, is a criterion, I would say that these cases rarely come to me for surgery until they have passed through the hands of several physicians, who are too often tempted to retain them until it is a question of desperate expedients as a last resort. And when, after full explanation and truth-telling, the patient voluntarily takes the risk of such measures, these very physicians are too often tempted to shrug their shoulders and say, by imputation at least, "Well, I did not believe an operation would help him, anyway." Thus the surgeon is made to assume the responsibility for a delay which has been counseled by others.

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[1] Address on Surgery before the Illinois State Medical Society, Quincy, Ills., May 20, 1902.

[2] MEDICAL NEWS, Dec. 28, 1901, p. 1009.

You see, the tendency has been in time past, to use a very common expression, to "save these cases from the surgeon." Many and many a time I have had a doctor tell me that he has kept a patient out of my hands as long as he could, when in truth, he has been guilty of the greatest indiscretion in not invoking surgery long before. How many lives has this policy cost? The profession has yet to learn that true conservatism means, if I may coin a word, *preservatism,* and that this is to be secured only by early attack.

Let us now take certain typical diseases of special organs and systems and rehearse some of the conspicuous illustrations of the truth of these statements. Of diseases ordinarily accredited to the nervous system there is perhaps none more common than *epilepsy,* whether traumatic or focal, or which, when assuming Jacksonian type, calls more loudly for surgical intervention. These cases at first go invariably to the general practitioners and from them often to the nerve specialists, the latter being more keenly alive to the possibilities of surgery than the former, but a period varying from months to years is usually wasted, during which conventional internal treatment is carried out and much time is lost, during which the epileptic habit, or epileptic dementia, is more positively declaring itself. Only at last, as a rule, when the futility of drug-treatment has been established, does the general practitioner begin to consider what may be done by surgery. And so these cases come into the surgeon's hands with the status epilepticus well-marked, or, with dementia as their most prominent feature, and he is expected to remove not only the local lesion, but to clear up the clouded intellect and to break up the bad habit of the nervous system. Not once in five times am I consulted about a case of epilepsy when there is any fair prospect of accomplishing what might have been accomplished had the case been surgically attacked earlier.

Meningitis.—If the dural cavity were to be treated on those broad general principles which obtain in treatment of infections of the peritoneum, we should see much earlier opening and flushing of the same. We have forgotten the lessons enunciated by the younger Gross during the Civil War, who reported a number of cases of septic meningitis following injury which were trephined and washed out; and Souchon's suggestion of drilling numerous small openings in the skull and using these for irrigation has not been received with the favor which it deserves.

Lumbar puncture is another measure which has not yet come into sufficient favor with the gentlemen who practise internal medicine. By its availability, not only for producing surgical anesthesia, but for exploration and determination of cerebrospinal fluid, or for recognition of bacteria, and for therapeutic purposes, as well by injection as by tapping (for example, in cases of hydrocephalus), it deserves more frequent resort than it enjoys.

In *tetanus* there is but one really efficient and semi-reliable remedy and this is the antitoxin; but this, as in the case of diphtheria, must be used early and freely. Its introduction into the frontal portion of the brain or into the subdural space requires the distinctly surgical operation of trephining, but it may be used to very great advantage without this formidable procedure. The main thing is to use it early and in sufficient quantity. It is unfair to expect of any of the antitoxins that they can have the same effect late in an infectious disease of which they are capable when used in the beginning. It was my good fortune, for example, not long ago to treat a case of this kind at home, in connection with Dr. Dorr, who recognized the disease in its incipiency and promptly gave the coveted opportunity. In this instance we used 23 vials of antitetanic serum and had the pleasure of seeing our patient completely recover. It was a case of the so-called Fourth-of-July toy-pistol type. Seeing it so early I did not feel it necessary to trephine.

Much might be said with regard to surgical attack upon the *nerve-trunks* when the operations for grafting, resection, elongation, exsection, etc., are called for. Too often the physicians treat these cases by electricity, delaying until there has been degeneration of the nerve-ends, as well as of the muscle, and when processes of surgical repair must be much more tedious or even doubtful. Of the various neuralgias, it is especially those involving the facial or sciatic nerves that I wish to speak. It happens so often that these cases are treated by gelsemium, nitroglycerin and other vaunted specifics, as well as by opium and those drugs which not only allay pain but wreck the nervous system, until they have reached a point when elimination is seriously impaired and they are constitutional wrecks. Finally, when human nature can bear no more they are put in the surgeon's hands with the expectation that he shall meet with prompt and final success, although their condition in every particular is toxemic and unfavorable. Such a patient may stand elongation of the sciatic nerve, but when subjected to removal of the Gasserian ganglion, his tired nature may fail to afford the recuperative powers which he needs.

With regard to the *ductless glands*, especially the thyroid, I will not detain you with a summary of the time wasted in iodine applications, iodine injections and treatment of that kind. If an enlarged thyroid can be easily reduced by iodine or thyroid extract, or any other internal measure, there is, of course, no reason why it should be subjected to surgery, but such measures will prove or disprove their own efficiency within a few weeks and there is no reason why these cases should be allowed to go on until enormous size is reached before putting them in the surgeon's hands, except either the wilfulness of the physician or the cowardice of the patient. Even in exophthalmic goiter, that disease which used to be considered as *par excellence* the one to be treated by the medical specialist, we have learned that when drugs fail, as they often will, there should be early resort either to extirpation of the thyroid itself or to Jonnesco's operation of excision of the cervical sympathetic, which in many severe cases has given far better results, and vastly more promptly, than have been afforded by any other means.

Were I a specialist in throat and nose diseases I should probably take time here to linger upon the numerous cases of so-called *asthma* which have been treated for months or years by various drugs and narcotics which have promptly disappeared after the removal of certain well-known intranasal conditions or lesions of adjoining parts. It will be enough, however, if I simply remind you that when a source of reflex disturbances within the upper respiratory tract can be traced, it should be promptly removed even though this require a somewhat formidable surgical operation.

A very frequent condition of the neck in which delay is too often counseled is that of *tuberculosis of the cervical lymph-nodes,* whether moderate or extreme in degree. Here months and years are often wasted in futile administration of cod-liver oil or of vaunted specifics, when, although the conspicuous lesion is in the lymph-nodes, the trouble has really originated in the tonsils, in the nasopharynx or in the teeth. The first thing to be done with these cases, obviously, is to remove the source and origin of infection. This may be to remove postnasal adenoids or the tonsils, or to send the patient to a competent dentist. The source of infection being thus removed, there is then some opportunity for specific drugs to exert their expected or desired effect, or there is then a fair opportunity for the surgeon who may see fit to enucleate the diseased parts, and this he will certainly prefer to do, if possible, before secondary infection shall have produced infiltration of and adhesion to all the surrounding structures. It would appear, then, that primary treatment of cervical tuberculosis must begin usually in the oro- or nasopharynx.

Pulmonary Abscess and Gangrene.—In these conditions what spray or application can reach the abscess cavity in any amount that shall be effective? There is ordinarily but one excuse for failure to operate early upon these cases and that is the sometimes insuperable difficulty of locating the lesion and deciding just where to operate. The same is true of certain cases of extensive bronchiectasis in which the cavity is so large and contains such an amount of fetid mucopus as to amount practically to an abscess.

Empyema.—I have a general rule which applies to every collection of pus, for that matter whether circumscribed or diffuse. It is this: *Pus allowed to remain will do more harm than can the surgeon's knife if judiciously used.* This applies to every part of the body and is a very conspicuous truth when we have a chest filled with pus. If these cases were not kept so long under medical treatment, waiting for that absorption which does not occur, we should have far fewer cases in which extensive resection of the chest is called for. When the physician has waited until the pleura is half an inch thick before he permits or advises an operation, he has encouraged the formation of an abscess with walls like sole-leather, scarcely capable of yielding, and which require a long time to come together by the granulating process.

Heart.—Some years ago Roberts published a monograph on the surgery of the pericardium which opened the eyes, especially of the American profession, to the opportunities of and indications for aspiration and drainage of the pericardial cavity. The lessons which he taught fifteen years ago, like those which have been taught by others before and especially since that time, have been either forgotten or not widely enough inculcated. Men will still persist in letting the heart work itself to death in consequence of the pressure of a distended sac, instead of tapping the pericardium early, or even opening it and draining it if pus be present. It needs still to be widely taught and emphasized that when the pericardium is distended with serous fluid, it should be aspirated and that when this fluid is pus, a thoracotomy should be done and the pericardium actually opened and drained by gauze or by tubing. This will prove life-saving when death might result without it. A lesson of my earliest years in practice when I did a foolish thing has, nevertheless, not been lost upon me. Before I had left one of the hospitals where I was serving as interne, I plunged an aspirating needle one night into the pericardial sac, as I supposed, of a man who was suffering from frightful embarrassment of its action, and gave temporary relief. After a few hours, however, he died and autopsy showed that I had gone through the fluid in the pericardial sac and that the point of the needle had actually entered and almost completely emptied an abscess in the heart-wall, because the cavity was nearly empty and the fluid that I drew off was pus, not serum. Since then I have had much less hesitation in introducing a needle in this region.

Strangely enough, one of the most daring of suggestions in a surgical way has come from Brunton,[1] who has been so widely known as a writer on therapeutics. He has recently proposed surgical intervention for the relief of *mitral stenosis* by exposing the heart within the pericardial sac, after raising a trap-door in the chest-wall, then dividing the stenosed mitral opening by the introduction of a fine knife, like that used for cataract. He was led to this proposition by experience in experimental therapeutics, but I imagine it will be some time before a surgeon will be found so bold as to resort to it in man.

Liver.—Abscess in this organ is too often allowed to remain unopened instead of being attacked early. A suspicion of pus in the liver warrants its exploration with the aspirating needle. No harm comes of putting such a needle into the liver. On the contrary, although the measure itself may be painful, relief is often afforded to pain and resolution of inflammatory lesions is stimulated. I have seen this repeatedly in the case of others and have even had to experience both this pain and this relief myself. In my estimation the liver ought to be explored in this way much oftener than it is.

Tumors of the liver are now successfully attacked and success comes in proportion to the promptness of this attack. While writing this paragraph I have heard from a patient upon whom nearly three years ago I operated because she had a tumor projecting downward from the liver. She was a very large, stout woman and a definite diagnosis could not be made, although the gall-bladder was evidently the seat of the lesion. After reaching it I found that the gall-bladder was much enlarged, contained calculi, was cancerous and that the surrounding portion of the liver was also involved in the cancerous infiltration. The entire gall-bladder, together with this infiltrated portion of the liver, was completely excised, oozing checked partly by suture, partly by cautery, and partly by pressure of drains, and the woman rapidly and completely recovered. My latest information, coming just at this juncture, is that she is as well and as hearty as ever.

Biliary Passages.—I would like to take much more time than can be spared me here in order to express convictions which I have recently formulated in regard to certain lesions of the gall-bladder. To epitomize them, I would remind you that there are several analogies between the gall-bladder and the appendix. Both are superfluous organs, both are to some extent at least reservoirs, both frequently contain concretions, both connect by small openings with the intestinal canal, both naturally contain some secretion, both are liable to constriction of outlet and a retention of contained material, and in both instances this material may undergo chemical changes which afford toxic matters that find ready entrance into the general circulation. In other words, both alike may produce by such disturbances a toxemia which shall be both lasting and serious. Further analogy is afforded by the clinical manifestations of their disorders, since pain, tenderness, indigestion so-called, or dyspepsia, with prostration, auto-intoxication and constipation, even widespread disturbances in secretion and elimination, are results alike of lesions of the appendix and that of the gall-bladder. Removal of the diseased appendix when producing such a train of symptoms is now accepted everywhere as a wise procedure, better carried out early than late. If my words and opinion can be counted for anything in the matter, there is, in probably fully as many cases, just as much reason for removal of the gall-bladder as of the appendix, though oftener for chronic lesions than for acute. We certainly do not see gangrenous processes so often in the gall-bladder as in the appendix. In a constantly-increasing proportion of instances I am now carrying out this principle, and I could cite a considerable number of cases of complete cholecystectomy, done within the past few months, on exactly the same principle and after a quite similar technic to those followed in removal of the appendix and with equally prompt and complete relief. Extirpation, then, is certainly the best operation for this condition when it can be carried out as it usually can be. It is much better than drainage or cholecystotomy or any other operation that I know of. I have now reached a point in my own belief and practice at which I can say not only that a suspicion of cholelithiasis justifies an exploration of the gall-bladder, but that when patients suffer from dyspeptic symptoms with pain and tenderness in the region of the gall-bladder, and especially with any evidence of biliary pigmentation, this region should be explored whether the gall-bladder can or can not be felt from the outside. This is a radical position, I realize, and yet I make the statement with equal positiveness and reason, based on a series of some scores of cases.

Pancreas.—The more acute the lesion of the pancreas, the more is immediate surgical intervention indicated. When we recall how disastrous may be an infection, a hemorrhage or an injury of this viscus, we must feel that in these cases every hour lost in securing surgical help is at fearful risk to the patient. There is but one successful treatment for these acute cases of pancreatitis, and that is afforded by the operative method. It should, moreover, be radical rather than moderate. Of course in the slower cases there is perhaps more time, but even in these drugs are practically powerless. Moreover, the mixed relations of the biliary passages and the pancreas, which are now attracting wide attention, are of themselves anatomical features which conspire to make early exploration most desirable. Chronic pancreatitis is nearly always a factor in cases of chronic biliary obstruction, and advanced surgeons of to-day believe not only that chronic jaundice always justifies and demands operation, but that when this is done it should include investigation of the duodenum and of the head of the pancreas, as well as of the biliary passages proper, an investigation which may lead often to incision of the duodenum and exploration of the diverticulum of Vater. When chronic jaundice is accompanied by excessive appetite and thirst, and especially by fatty stools, complete exploration of the pancreatic region is particularly indicated.

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[1] Lancet, Feb. 8, 1902.

Spleen.—We have still to abandon the ordinary leucemic and malarial spleen to the physician and concede that these lesions are far better treated by him than by us. There is, however, a particular disease in which the spleen affords the most conspicuous feature, known sometimes as *anemia splenica,* sometimes as splenomegaly, and often as Banti's disease because, though not first described by him, it is nevertheless quite generally called by his name in Italy and elsewhere. This disease is characterized by three stages, (1) one of anemia, which may last from three to ten months, (2) a stage of splenic enlargement, the so-called splenomegaly, and (3) a stage of ascites, the second stage being often transitional and of uncertain length, and the third terminating in from six to twelve months. There is often an accompanying enlargement of the liver, which must justify Banti's view that the disease is essentially a toxemia of intestinal origin. It is marked also by increased alkalinity of the blood and by a purpuric tendency to bleeding from all parts of the body, such as is seen in the slower pancreatic affections. In this disease drugs have proved of no avail and, as soon as it is recognized, the spleen should be extirpated, the prognosis being good both as far as the operation and the subsequent course of the disease are concerned.

Kidneys.—It has long been known that certain painful conditions of the kidney are associated with increase of renal tension due to an inelastic capsule, and some years ago it was suggested by Reginald Harrison that splitting the capsule might afford relief from renal tension and this constant pain. This became a recognized procedure. On the same principle it has been carried still farther by Edebohls[1] in all forms of chronic Bright's disease, it being immaterial whether this be of parenchymatous, interstitial or diffuse type. The theory upon which this measure is based is not only that it relieves tension, but that by decapsulation of the kidney adhesions are produced between the decorticated surface and the surrounding tissues, so that by means of new vessels what he calls hyperemization of the kidney tissue is permitted. This encourages regeneration of epithelium, and thus it comes about that the kidney becomes again quite capable of carrying on its function. Even when destruction of tubules by pressure of exudate has made this seem impossible, there are, nevertheless, rehabilitation and restitution of kidney function. This gradual restoration begins to occur within ten or fifteen days after operation and goes on indefinitely.

My own experience would lead me in some cases even further than this in the direction not merely of decapsulization, but of exploration of the pelvis of the kidney. One case which has led me to this statement is briefly as follows: A young woman, a graduate in medicine, was under my observation for over a year for a condition apparently of intermittent hydronephrosis which gave her at times intense pain; during the attacks I have felt the right kidney to be nearly as large as my double fist. The trouble was apparently due to kinking of the ureter, although there was a question of obstruction by calculus. Examinations of urine showed repeatedly such an amount of tube-casts and other evidences of renal disorganization from each kidney that I hesitated to operate. At last intense pain and suffering had stimulated her resolution to the point where she absolutely forced matters to operation, although at this time her daily output of urine was not over ten or twelve ounces. Nitrous oxide gas was the anesthetic used and exploration of the right kidney showed it to be unusually movable but apparently not enlarged. Not satisfied with freeing it from its surroundings and extensively loosening its capsule, I brought it to the surface of the wound and opening at the center of its greater curvature, thoroughly explored the pelvis with the finger-tip, finding nothing except a dilated pelvis. I plugged this opening with gauze, lowered the kidney into its place, suspended it upon two tapes of gauze, which were sewed to the skin margins, and closed the external wound with silkworm sutures. The gauze inserted into the kidney structure was allowed to remain for five days, the gauze tapes remained for about ten. From this opening in the kidney, after removal of the gauze, not a drop of urine ever escaped; within twenty-four hours she had doubled her previous production of urine, and within a few days was passing an almost normal amount. The urine also cleared up and now, at the expiration of nine months after the operation, she has scarcely any trace of the original condition. She has not, however, been entirely free from pain, although her relief has been very great. A case like this teaches one the advantage of radical handling of these organs and I have not hesitated to repeat it in other instances and always to my satisfaction.

Ascites.—Thelma, of Utrecht, noting new anastomoses between the portal and systemic veins while making autopsies on cases of ascites, suggested the propriety of producing adhesions between the peritoneum above with the liver and spleen and of the peritoneum of the abdominal wall with the omentum. The suggestion was first carried out by Vandermeule in 1889, although without success. Quite independently Morrison of Newcastle had made similar observations and he proposed deliberate friction of the opposed surfaces just mentioned, together with suture of the omentum to the abdominal wall, with drainage of the pelvis for a few days by a glass drain passed through a separate opening low down. These operative procedures constitute of course a deliberate attempt to short circuit, or rather to shut out of the circulation the obstructed portal vein, permitting the blood to pass directly from the portal terminals into the systemic veins. It is founded on anatomical relations and will succeed often if not resorted to too late. Brewer[1] has recently tabulated some 60 cases of which 38 have recovered, with 6 of them apparently positively cured and the majority very much improved. Inasmuch as the operation must be regarded as still in its experimental stage, it is to be feared that, as too often occurrs, patients will not be subjected to it until the cirrhosis, or other disease by which it is made necessary, is far advanced. My own experience with it is confined to two cases in which it was done very late and in which there was no conspicuous improvement.

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[1] Medical Record, Dec. 21, 1901.

Stomach.—There are three non-malignant diseases of the stomach which are conspicuously amenable to surgical intervention just as soon as diagnosis can be made. These are ulcer, either simple or perforated, benign obstruction, and dilatation. If diagnosis of these conditions cannot be made there is all the more reason for early exploration. The brilliant achievments of Mayo-Robson have shown how safe and how almost invariably successful these operations are and demonstrated how the work of even one man may lift a class of diseases and an entire organ out of the realm of empiricism into that of safe surgical treatment.

Gastric Cancer.—It is especially with regard to cancer of the stomach that I want to detain you for a few moments. Every one acknowledges that in order to be of value diagnosis must be early—that is, at a time when surgery offers a fair prospect of relief, since there is no real treatment for this condition except operation. To be sure, we realize that gastric cancer may run an exceedingly acute course and kill even within three months, and that for such cases there is as yet no help. Again, its course may be apparently latent, that is, without conspicuous gastric symptoms, even though frequent analyses be made. This is especially true when it follows ulcer. There is, as a rule, a latent period lasting from three to five months of mild gastric symptoms other than vague dyspepsia or something that passes under that name. At this time, of course, it is not possible to recognize it by any of the known tests. Gradual aggravation of symptoms with progressive emaciation constitute the most suggestive features of these cases in the early months. For their recognition each should have only its proper weight. About half of these cases occur under fifty years of age and it is worth while to remember that the disease is known in children. It has no characteristic subjective symptoms. Nausea, pain, anorexia, thirst, distention, dilatation, eructation, and vomiting, all of these may occur in other conditions, although vomiting is a symptom in about 80 per cent. of these cases. It is more rare when the openings are free, while the amount of the vomitus is simply an index as to the extent of the dilatation.

Pain, which comes usually early, becomes constant and may be referred in such a way as to be misleading. Hematemesis, at first slight, is a frequent accompaniment, but not so much so as in ulcer, nor is it so copious. The general depression and cachexia of cancer are common to malignant disease in any part of the body, although when the disease affects the stomach nutrition must be interfered with and there is more likely to occur a secondary hematogenous infection.

Study of the gastric functions shows that free HCl is usually, but not always absent. Inasmuch as only the central portion of the mucosa secretes this acid its absence may often be thus accounted for, because the pyloric end does not furnish it. On the other hand, the presence of free hydrochloric acid does not disprove cancer any more than its absence proves it. It is also absent in certain other conditions. The secretion of pepsin follows about the same rule or course. So far as lactic acid is concerned its absence does not mean nearly as much as its presence, which is always suggestive but not indicative. The stomach-contents in advanced cases may show tissue fragments having a distinct cancerous structure or containing karyokinetic figures, and these are pathognomonic when recognized, but they are never secured early and at most times only with difficulty. So with regard to the Oppler-Boas bacilli, which when present are of importance, but they, too, are not an early sign.

When, coupled with these signs and symptoms, there is distinct tumor in the epigastric region, it is generally supposed that diagnosis is fairly certain and reliable, and the surgeon rarely sees such a case until this period is reached, although some surgeons have regarded the presence of tumor as contraindicating operation, meaning thereby that it is then too late.

I have had, however, the fallacy of all these chemical and other tests so repeatedly demonstrated in my own work that I have come to feel that the diagnosis of carcinoma ventriculi is at times both difficult and uncertain. Thus, while preparing this paper, I operated upon a man who had been steadily failing, who referred all his symptoms to his stomach and his discomfort to his epigastrium, who had no free hydrochloric acid, but did have plenty of lactic acid in his stomach-contents, and who had a distinct tumor in the conventional region. Opening his abdomen, I was, I confess, not much surprised to find that his stomach was absolutely free from any sign of disease or obstruction, and that all his symptoms were referable to an old cholecystitis with adhesions, which furnished the tumor we felt behind the rectus and all his other signs and symptoms. Complete removal of the gall-bladder promptly relieved him of pain and started him on a course toward recovery. This case, by the way, which I expect to discuss in other aspects at another time, affords ample excuse for repeating the rule which I do not hesitate to lay down, namely, that all cases of pain and tenderness in the region of the gall-bladder, accompanied by stomach symptoms and evidences of even occasional biliary obstruction, call loudly for exploration of the region of the biliary passages.

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[1] MEDICAL NEWS, Feb. 8, 1902, p. 241. See also Wier, Medical Record, 1899, Feb. 11. Packard and Le Conte, Amer. Jour. Med. Sciences, 1901. Tilden Brown, Report of Presbyterian Hospital for 1890. Ito and Orni, Deutsche Zeitschrift für Chirurgie, 62, p. 141.

I have rehearsed these features of cancer of the stomach in order to show thereby the impracticability, usually the impossibility, of recognizing gastric cancer early, the fallacy of the ordinary tests that apply, and the extreme unwisdom of waiting until tumor or cancer fragments or Oppler-Boas bacilli are found. Realizing all this, let us adopt this rule; let us say that every case of progressive stomach disturbance shall be operated, *i.e.,* at least explored, when, to the stomach symptoms themselves are added any two of the following symptoms: (1) Rapid emaciation; (2) achlorhydria; (3) reduced proteid digestion; (4) lactic acid; (5) Oppler-Boas bacilli; (6) suspicion of tumor.

If, now, this practice be adopted as a rule of conduct, I think I can assure you that the risk of an operation will prove far less than the risk of leaving the case undiagnosed. It needs to be everywhere and strenuously emphasized that stomach cancer is a surgical disease, to be dealt with by radical operation at the earliest possible moment. I am sure that both simple and cancerous disease of the stomach will hereafter come much more often under the knife than has hitherto been the case. See, for instance, what surgery may do for dilatation in which gastroplication affords positive relief; for ulcer, in which its exsection affords a radical cure; for benign strictures of the pylorus, in which plastic operations give most beautiful results; for hourglass obstruction, in which anastomosis is of great benefit, and even for gastroptosis, in which gastrorrhaphy may be of much avail. Of all these it may be said that, while internal treatment may alleviate, it can never cure.

Duodenum.—The lesions here which are most amenable to surgery are those of perforating and non-perforating ulcer, cancer being extremely rare in the duodenum. For these conditions, if anything is to be done, it must be by surgery alone. In most individuals the duodenum can be so exposed as to permit of opening, exploration and even exsection of localized lesions.

Small Intestine.—Cancer and all other forms of obstruction of the small intestine are distinctly surgical lesions. Only by operation can anything be accomplished, but this operation must be early if we are to avoid deep or widespread lymphatic involvement. The slightest positive evidence of continual or increasing obstruction of the bowel should, therefore, be followed by exploratory operation.

Cecum and Appendix.—Early operation in cases of appendicitis has been urged and insisted upon so many times and by so many writers that at this point I need only mention it to show that it is not forgotten. Perhaps the wisdom of early intervention is not shown more positively in any disease which one can think of than in this. So many other surgeons, however, have done full justice to the disadvantages of delay, nay the fatality of delay, that I shall not take your time here by adding to what has been better said. I would simply like to record myself here as siding with those who feel that in acute diseases early operation is always wise and expedient, no matter whether or not it may transpire that cases get well without it. Early operation is always advisable and will always be commended by good surgical judgment.

The Lower Bowel.—So far as the colon and rectum are concerned I would say that I never have treated a case of malignant or non-malignant stricture of this tube which had not already passed through the hands of others, being treated for dysentery, or piles, or something of that kind. In my own case I do not have to make a single exception to this statement. Too often they have long passed beyond the period when even those formidable operations, to which Dr. Fitz takes exception, would be of any lasting benefit, and too often I have had to make a simple colostomy, feeling that the golden time for radical surgery had passed under medical auspices and that the best vital interests of the patient would be conserved by less radical attack.

Incidentally, also, I would call attention to the wisdom of early surgery in cases of minor importance such as anal ulcer, fissure, etc., in which patients are encouraged under medical advice to fool away months or years of time with ointments or local applications, when a good, thorough stretching of the sphincter or curetting of the ulcer would afford complete and final relief. I have known more than one instance of melancholia and of mania relieved by attention of this kind, the patients being thus redeemed from the grasp of the asylums.

Obstruction of the Bowel.—Again it is the lot of every surgeon to see case after case, when it is too late, when not only time but the strength and vitality of the patient have been sacrificed by the internal use of cathartics and purgatives and even the bowel ruptured by too enthusiastic use of irrigations. I think I may say that I never yet have operated on a case of this kind in which there was not the best of reason for regretting the time thus wasted.

So too of *dysentery.* There are not a few cases of obstinate dysentery, in which the patients' lives are made miserable and their time and money wasted by futile internal treatment, when a colostomy on the right side for purposes of physiological rest of the colon with a later closure of the artificial anus at the proper time would give prompt relief.

Tuberculous Peritonitis.—Regarding operation in this condition, the surgeons are as yet somewhat divided among themselves. The late Dr. Fenger, a warm personal friend in whose surgical acumen I had unlimited confidence, took an attitude in this controversy with which I never could agree. He questioned the advisability and the wisdom of the ordinary abdominal section as often made for this condition. All this shows how men's experiences differ. Within a year past I have had four cases which so distinctly and beautifully illustrated the benefit of this operation that I should feel as though it were denying a patient an extremely hopeful procedure were it to be refused under these circumstances. Although I have washed out all of these cases with silver solution, I did not attribute the resulting apparent cures so much to the silver salts as I did to the general procedure which seems to me most wise and promising; promising, at least, a great deal more than can be offered by internal measures alone.

But I could continue this list of illustrations by the hour, long after you were wearied with them. I shall leave out, therefore, the whole category of genito-urinary disorders and the pelvic lesions of women, among which could be found just as striking examples of the wisdom of early intervention. I even resist the very strong temptation to speak of the various conditions called rheumatism which are not rheumatism at all, including acute osteomyelitis, bone-abscess, tuberculous joint diseases, etc., the distinctly surgical character and therapeutics of which are too often overlooked by general practitioners. An entire hour might easily be devoted to the so-called rheumatisms which are not rheumatism at all.

Fearing even now lest you have been wearied I would conclude these remarks by one or two disclaimers. In all that has been said I have never meant to hold up surgery as a panacea for all ills. The man who voices such sentiments as I have expressed might even be accused of having interested motives, yet the facts remain that, if our sole aim is to give final and complete relief in the shortest time, the surgical route often affords it. By availing himself of surgical measures a patient may often be cured while, according to the older routine, the physician would still be studying to make a diagnosis. Thus, by surgery, may often be done the greatest good to the greatest number in the shortest time. Therefore, I protest again that it is too bad to blame us for lack of success in advanced cases and at the same time to keep us from securing these cases early instead of late.

In justice to myself, in closing, I simply want to disclaim any intention of offending a large class of men, capable, competent and sincere general practitioners, upon whom my remarks might otherwise seem to reflect. They are so busy with their legitimate duties and concern themselves so much with internal therapeutics, in which they are such masters, that the worst I could or would say of them is that their line of research does not include the surgical measures which I so warmly advocate, and it is scarcely to be expected that they should be as well informed in one direction as in the other. But few of these worthy gentlemen are so hidebound as not to recognize broad general truths, and few, if any, of them are selfish enough to keep patients from securing the best that can be afforded, whether it comes through medical or through surgical hands. Conventional and conservative most of them certainly are and that is why we get our cases so late. That, too, is why I have talked to you as I have to-day. One other thing needs be said: I well realize how often it happens that when physicians advise an early operation, the patient will not consent, the mere thought of surgery being enough to entirely upset the equanimity of a certain portion of human beings. If patients thus deliberately deprive themselves of that which can be done for them, we may regret it, but it is not the fault of our profession. Too often, also, the physician speaks of it in such a half-hearted way that he fails to convince. It would seem possible, however, by educating the laity and by familiarizing them with the progress of our art, to bring about a gradual revulsion of feeling, so that patients can be brought to consent early to that which is for their real interest.

A REVIEW OF THE PROGRESS OF THERAPEUTICS FOR THE LAST TWELVE MONTHS.[1]

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IN commencing the scientific program of the third annual meeting of the American Therapeutic Society, I would offer congratulations upon the remarkable interest in therapeutics which has been awakened, for which the Society is in a large measure responsible. The medical journals are devoting increased space to the subject. The year-books are mostly dependent upon therapeutics for their chief interest. The practical papers are those sought for by the Societies. The practitioner demands more of the consultant than a diagnosis, "How shall we best cope with disease and help the patient?"—a demand that only the trained therapeutist can meet. Not only the physician-specialist and the general practitioner are interested in our work, but specialists of every sort look to us for aid. On the other hand, the fact that distinguished specialists, at our invitation, honor us by their presence and papers, indicates not only the interdependence of the differential parts of the body medical, but that complete knowledge can result only from their integration. Measures of which we know the general principles are returned to us by those working within closely-defined boundaries with their special applications determined and codified. Physician-specialist and surgeon-specialist, general practitioner and limited specialist meet on the highest plane of the healing art, that before which all the rest of medical science is elementary and preliminary—how to cure sick people. While some will tell us what of greatest moment, in their opinion, has been recorded in their especial fields, we are quite sure that they will learn from pure therapeutics many measures which will find application with or without modification in special work. Nothing which pertains to man is foreign to our interest, but that which devotes itself to removing mankind from sickness to health is worthy of our best brains, most painstaking industry and conscientious efforts. If you will glânce over the program you will be sure that the most captious critic would be silenced. We intend to have outspoken, honest and intelligent therapeutics, with all cranks, faddists and mediocrity eliminated. The laboratory and the hospital will give their conclusions, the library and the clinic will add their share, and all for the benefit of suffering humanity.

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[1] Presidential address delivered before the American Therapeutic Society, New York, on May 13th, 1902.

The following report is based upon the literature of the past year as it has been reviewed, and most of the methods and remedies have been verified by me. I have purposely abstained from mentioning some subjects which will be presented by other speakers, notably Röntgen-therapy and the use of organic extracts.

Suprarenal extract, either as adrenalin or epinephrin, has excited considerable discussion as to its chemical constitution. Abel concludes as follows:

(1) The blood-pressure-raising constituent of the suprarenal gland may be isolated by the method described by him in the form of a basic, minutely crystalline, though unstable compound, which agrees in some of its properties with the substance that he has called epinephrin, while it fails to exhibit certain other equally fundamental and characteristics properties of this substance. (2) Mineral acids, however, easily convert this substances into one which is physiologically active and which also gives all the characteristic reactions of the epinephrin, $C_{10}H_{11}NO_3$, contained in his former series of compounds. Highly soluble and apparently stable salts of therapeutic and chemical importance are therefore easily made. (3) Analyses of the substances described will soon be given to show what changes, if any, in elementary composition take place under the influence of the acids used in the conversion; also how these new compounds of epinephrin will agree in composition with those of his former series; also, how far the substance isolated by the zinc process agrees in composition with the similar and probably identical compound contained in the material analyzed by Aldrich and Takamine. So far as its astringent and hemostatic properties go, there is practically a consensus of opinion. The list of conditions in which it is useful continues to be enlarged and it is a real addition to our armamentarium. Adrenalin hydrochloride should generally be employed in strength of 1-1,000 (1-500 for eye-work, Bulson). As an anesthetic more time is required than for cocaine (ten to fifteen minutes). As a hemostatic, it seems to be safer and more lasting than the latter. Cautions as to the use of suprarenal extract were mentioned last year. Suprarenal extract given internally for hay-fever is in increasing vogue.

Diphtheria antitoxin has now established a secure position notwithstanding the unfortunate tetanus epidemics which have probably been due to carelessness in the preparation or putting up of the serum. If politics in and out of local boards of health could be eliminated, doubtless this objection would be removed.

There is but little encouragement for the use of antitetanic serum, perhaps because the statistics reported are too few. Lamker has collected fifty-two cases of intracerebral injections, with thirty-three deaths—sixty-three per cent.—in a majority of which both intravenous and subcutaneous injections were also made. If these statistics be compared with those without intracerebral injections, we are not favorably impressed with the new method.

Calmette's antivenomous serum has been successfully used in a few instances.

Antistreptococcic serum has made some, not marked, progress towards acceptance. It is certainly not a routine remedy, but should be reserved for desperate cases.

Antipneumococcic serum is still *sub judice*, so for as known the results being in no instance comparable to those obtained by massive doses of creosote as an organic salt, as shown by the reports of Weber, Thomson and Wilcox.

Inoculation against enteric fever has been practised with a fair degree of success and the matter, in spite of Melville's unfavorable reports, is well worthy further investigation. Wright has studied the blood-changes after antityphoid inoculation. He found when vigorous reaction occurred that the bactericidal power of the blood decreased and the susceptibility to typhoid fever increased for from two to three weeks, but that afterward these conditions were reversed. He found that there is a definite limit beyond which the bactericidal power of the blood cannot be increased by inoculation with sterilized cultures of typhoid bacilli.

Antiplague serum, either that of Yersin, Roux or Lustig and Galeotti seems to influence favorably the disease without danger to the patient.

Coley is still working upon the mixed toxins of erysipelas and bacillus prodigiosus in inoperable malignant growths, chiefly sarcomata.

Wendlestadt was led by the close relationship of leech extract to the ferments and the animal and vegetable poisons with which an immunity can be produced to experiment with the view of developing an antibody. The heads of leeches were triturated with powdered glass, the resulting mass extracted with the normal salt solution and filtered so that twenty cubic centimeters corresponded to fifteen leeches. The extract was then injected subcutaneously or intraperitoneally into rabbits, in doses of from one to five cubic centimeters. Many animals died from sepsis or peritonitis, since it was not thought wise to sterilize the material. The serum of the five rabbits which had survived the injection of large doses showed a distinct reaction toward the extract in that the inhibitory action of the latter on clotting disappeared to a certain extent. By heating the serum up to 134 to 140° F. it was rendered partially inactive. It was found that the antibody develops after twenty-four hours; the maximum reaction is reached after forty-eight hours, but there still is some present two and three weeks after the injection. The proof that the antibody is really a specific one lies in the fact that the serum from injected animals, if mixed with blood, clotted in exactly the same time as does normal serum with blood. The author also succeeded in causing the production of an antiserum which naturally had much the same effect on coagulation as the original leech extract. The active principle here is not affected by heat. The origin of the various antibodies was found to be the pancreas and, to a less degree, the liver and kidneys.

Bashford has been investigating the question of immunity, in consideration of the many uncontrollable factors which form important chapters in the study of immunity toward bacterial toxins, since it seemed proper to ascertain whether a similar protective mechanism could be induced by chemically simpler bodies and thus an insight into the chemistry and physiology of the process be obtained. Pohl would seem to show that indeed such is possible, for he has found that rabbits could be immunized by gradually-increasing doses of solanin, so that this drug no longer caused a hemolytic action upon the red cells. Bashford, however, from his individual work, claims that this is not so; indeed, the red cells of a rabbit treated with solanin were found to be more, instead of less, sensitive to the action of this drug. This increased susceptibility may be explained as due to anemia which had developed in the animals as a result of the repeated injections. Two rabbits were selected; one was treated for twenty-five days with almost fatal doses, twelve in number; the second left undisturbed, when a dose exceeding the fatal one was then injected; both died in approximately the same time.

As to the spinal use of cocaine, Reclus noting the six, possibly eight, deaths due to this method, contends that it gives a less degree of security than do our ordinary anesthetics, so that until further proof is furnished, ether, chloroform, and the local use of cocaine cannot without injustice and danger be dethroned even partially from their present eminence. Guinard quotes Ravoul and Aubourg to show that an injection into the arachnoid space gives rise to a defensive movement in the vessels (no doubt by vasodilatation), which is accompanied by a leucocytic infiltration into the spinal liquid and by hypertension. The more intense this defensive process is—and this depends on individual susceptibility— the greater the headache, rise of temperature, etc. The author's method consists in withdrawing a sufficient quantity of the spinal liquid itself for use as a vehicle in which to dissolve the cocaine used for injection. This seems to be a near approach to the ideal, for by this method but few foreign elements are introduced. Quinine, according to Jaboulay, is superior to cocaine, when injected into the subarachnoid space, in causing analgesia which, although less in extent, lasts two weeks. Its use is suggested for cystitis, local cancer, sciatica and other neuralgias and neurites situated in the lower extremities. Albarran and Cathelin have treated urinary incontinence by intraspinal injections of serum or of cocaine. Success resulted in thirteen of fifteen patients treated. Generally two or three injections at the interval of a day, and later on oftener, may be required. Mariotti suggests the intra-arachnoid injections of carbolic acid, corrosive sublimate or iodine in dose sufficient to destroy micro-organisms without producing toxic effects—about the usual hypodermatic dose—for cerebrospinal infections. In dogs no unfavorable symptoms were observed even when the injections were repeated. From careful experiments he proved that the injections might extend even as high as the fourth cervical vertebra; others have claimed that they reached the brain.

White has proposed the injection beneath the cerebral cortex of half a dram of benzoyluinyldiacetonalkamin, in a sterile two-per-cent. solution with a view to producing a local sedative effect. This might, according to Jelliffe, have a possible antidotal effect upon a theoretical toxin, antagonize the action of an autogenous poison or of an invading microbe, or it might act by improving nutrition in some unknown way. Time alone will determine the value of this procedure.

On general anesthesia a very large number of papers has appeared. The burden of most of them is better education and larger experience for the anesthetist and pleas for the recognition of anesthetization as a specialty. With this the reviewer, remembering a score of years of hospital service, is most heartily in accord. Becker has carried on about five hundred narcoses with ether to which ½-of-1-per-cent. oil of pine (*oleum pini pumilionis*) has been added. With this plan ether may be employed in bronchitis, pulmonary tuberculosis, empyema and the emphysema of old people. No aggravation of the disease has been noticed. The ether is not rendered unfit for inhalation, but rather improved, because these ethereal oils greedily take up oxygen and have ozonizing properties.

Cumston has reported on calcium hydrosulphide, as a paste, used as a depilatory which does not irritate, cause pain nor leave any after-effects.

Carbolic acid has received much attention, both as an internal and as a local remedy. In cases of poisoning by it, and they are by no means infrequent, various antidotes are recommended, but 95 per cent. alcohol remains the most effective.

Gautier repeats his encomiums on cacodylic acid (dimethyl arsenic) as a sodium salt, and much has appeared during the past year. In addition to the ordinary uses of arsenic, over which it apparently possesses the advantage of larger doses and, if given hypodermatically, fewer instances of untoward effects, tuberculosis, sarcomatosis and carcinomatosis have been benefited. Murell's report on sodium cacodylate should make us quite as cautious as we are with other forms of arsenic. On the whole, its use has been gradually increasing and, if the usual precautions are observed, it should be satisfactory. Since all new remedies must pass through the period of criticism, we are of the opinion that this has now gotten upon an established base.

Gelatin is strongly recommended in hemoptysis by Castaing and in hematuria by Schwabe. It is contraindicated in acute nephritis only. In hemophilia, purpura and in the hemorrhagic forms of acute nephritis, it is probably the best remedy. Subcutaneously about ten ounces of a 1-per-cent. solution are required. Zibell, after noting the various uses of gelatin as a hemostatic, has reached the conclusion that it is the contained lime which causes this phenomenon. In this way he harmonizes the observations upon this substance with those upon such lime salts as calcium chloride. Calcium chloride by increasing the coagulability of the blood has been the subject of but few reports and those are satisfactory. Menorrhgia is the latest addition to the list of indications.

Iodine in sesame oil (10- to 25-per-cent. solution), up to six drams by injection into the muscles of the back, seems to be useful in tertiary syphilis and by the mouth in bronchitis, pleurisy and various glandular inflammations. As a method of giving intensive doses in syphilis it is to be recommended.

Resorcin has apparently found new uses, (1) as a spray, one-third of one per cent. with an acidulated solution of quinine, in whooping-cough, (2) as a preservative of solutions of suprarenal extract, (3) as a 30-per-cent. ointment in lupus vulgaris, and (4) as a dusting-powder in rodent ulcer.

Atropine for desperate cases of intestinal obstruction has been the subject of much controversy. The general verdict seems to be against its usefulness and with Geberle we are inclined to agree that it is only in the paralytic or spastic form that internal treatment is of use, and even here morphine is preferable. If it has a place, it is only in distinctly inoperable cases.

Yohimbin, in dose of $^1/_{12}$ gr. increased gradually to $1/6$ gr., has marked aphrodisiac properties. However, Kranhoff reports that even the minimal dose excites salivation, nausea and even syncope.

The use of formaldehyde by inhalation seems to be increasing and yields good results. Muther claims to have cured seven of fifteen patients. In this he is seconded by Bierwald. Formaldehyde in glycerin (1 to 4 per cent.) does not cause so much irritation and pain when applied to a mucous surface. In ozena, follicular tonsillitis, diphtheria, the angina of scarlet fever, parasitic stomatitis, and tuberculous ulcers, the results have been such as to warrant further use.

Hexamethylentetramin as a urinary antiseptic still is much in vogue. It appears to be superior to salol, ammonium benzoinate, boric acid, guaiacol, napthalin and resorcin. In enteric fever the cystitis is cured and the urine freed from the bacillus of Eberth. It has established its place as the most certain and useful urinary antiseptic and urotropin has come to stay.

Saint-Philippe finds arsenic iodide, five drops after each meal of a 1-per-cent. solution, inincreased to fifteen or twenty drops, of great value in the bronchitis of strumous children.

Difluor-diphenyl is an ointment of five per cent. (10 parts of vaseline and 85 of lanolin) which thoroughly rubbed into the back, chest and abdomen of children, seems to diminish the number and severity of the paroxysms of whooping-cough.

Sodium cinnamate has received much attention. While some claim good results, testimony is decidedly discordant. As a remedy for pulmonary tuberculosis given intravenously, some report marked success. It has no preventive action on animals infected with virulent bacilli.

Solt makes a sound plea for the routine use of ergotin as a prophylactic and even as a specific against puerperal fever. The dose employed is from one and one-half to three grains.

The depressing effects of methylene blue when administered to patients suffering from nephritis has led to its trial in various forms of mania and paretic dementia by Hughes and Lovelace, who gave it in twenty-two cases. These were nearly all cases of wild excitement when the drug was used, and in all but six it produced a calmative effect which did not resemble the action of hypnotic drugs, but seemed rather a natural quietude; the patients were relieved of excitation, but without dulness. The effect was observed three or four hours after a dose had been given and lasted from fifteen to twenty-four hours. Generally one grain was given, twice daily or oftener, hypodermatically; in the remainder two grains were given in capsule. In only one instance did depression result. Each patient slept well at night, but not during the day. The only unpleasant symptom which could be ascribed to the drug was the vertigo noted in one patient.

Administration by mouth was marked by total absence of all gastro-intestinal derangements. It is possible that a valuable remedy has been discovered for quieting many patients suffering from incurable mental disease in which excitement is a prominent symptom.

Romero paints his patients suffering from smallpox thrice daily with a 1-per-cent. solution of picric acid and $7^1/_2$-per-cent. alcohol in water. Generally pustules do not form, but if they suppurate he employs an ointment of 2½-per-cent. of picric acid and 2 per cent. of alcohol in hydrous wool fat four times daily. Picric acid is believed to inhibit the growth of the micro-organisms and thus prevent suppuration.

Cushny and Van Naten have found that the effects of caffeine on the dog's heart are (1) an acceleration in the rhythm without further change; (2) a shortening of the movements, commencing in the auricle and spreading to the ventricle, and (3) in large doses auriculo-ventricular arrhythmia terminating in the fibrillary contractions of the auricle and finally in the ventricle. If the action of this be compared with that in the digitalis series it is found that, so far as the direct action on the heart is concerned, they resemble each other, both affecting only the heart muscle. But in the case of digitalis, the earliest changes are seen in the strength of the systole and the extent of the diastole in the ventricle and auricle. These parts of the heart are thus affected sooner than is the excitomotor area and the contrast between the action of the two drugs may be explained by stating that while both act on the heart muscle, the stimulation exercised by caffeine begins in the excitomotor area and descends to the auricle and then to the ventricle, and its effect on the rhythm (so far as these are caused by direct action on the heart) are of secondary importance. Further, the primary changes induced by the digitalis series are not so much evidenced by increased irritability of the parts affected as by increased contractibility and increased dilatation (increased tone), while there is no evidence of such change in the late stages of caffeine-poisoning, in which the ventricle is directly affected.

Martin and O'Brien, from an extensive experience, recommend an ounce of a 3-per-cent. solution of ferrous sulphate, the same quantity of a 5-per-cent. solution of caustic potash, 30 grains of powdered magnesium oxide, a metal receptacle of one pint capacity and a stomach-tube. The two solutions are kept in air-tight tubes which can be broken into the receptacle, the powdered magnesia and half pint of water added, shaken up and administered. This method is preferable to cobalt salts, which are poisonous, and hydrogen dioxide, which is comparatively valueless.

Dupuy has been experimenting with a mixture consisting of from 5 to 20 parts of cocaine, 50 parts of aniline oil and 50 parts of alcohol to produce anesthesia of the tympanic membrane. Tympanotomy and ossiculectomy have been performed painlessly under its influence. Twenty minutes are required for anesthesia. In one instance drowsiness, cyanosis, cold and clammy perspiration, subnormal temperature, rapid pulse and respiration followed its use for persistent earache which was completely relieved. Since aniline has been shown to be extremely toxic, this combination should not be used except for operative purposes, and then as soon as possible after the operation the external auditory canal should be irrigated.

Fliess' views, as to the so-called genital areas in the nose have been confirmed by Schiff. Cocaine applied to the inferior turbinated process relieves hypogastric pain; when applied to the tuberculum septi, lumbar pain ceases. Dysmenorrhea, either nervous or due to disease of the sexual organs, is relieved by applications of the galvanocautery. Mechanical dysmenorrhea (stenosis, anteflexion) is not benefited. A few drops of a 20-per-cent. solution was employed and the results were satisfactory, the possibility of suggestion being removed. The opinion is offered for discussion that this method of applying cocaine may be found to be far preferable to its intraspinal use in lying-in hospitals.

Zomotherapy, the feeding of tuberculous patients with large quantities of raw meat and expressed meat-juice, although highly praised by Richet and Héricourt a few years ago, is believed by Frankel and Soternheim to be overrated. My own experience, based on observations of patients who had been so treated, leads us to condemn unqualifiedly the practice.

Sodium and potassium tellurate in ⅓- to ¾-grain doses appears to be effective in the night-sweats of pulmonary tuberculosis. Its garlic-like odor is objectionable. It will be remembered that to this, as an impurity, is due the peculiar odor after the ingestion of various bismuth compounds.

Bulkley finds that a 2- or 3-per-cent. aqueous solution of potassium permanganate painted on and allowed to dry relieves the itching of eczema.

Phototherapy, to which allusion was made last year, is regarded by Teredde as the best method of treatment for grave forms of lupus erythematosus. Various experiments have been carried out with lights of different compositions. Quite likely something of definite therapeutic value will be formulated within the next few years.

Pilocarpine often causes the vertigo to disappear and improves the hearing in Menière's disease, according to recent observations.

Guaiacol in hydrous wool fat (1 to 2) is of considerable value as an ointment in epididymitis. The cacodylate by injection, according to Barbour, gives lasting and rapid benefit in tuberculosis.

A terpinol from the *Melaleuca viridiflora*, ½ to 2 drams by injection of a 70-per-cent. solution, has given excellent results in whooping-cough. In tuberculosis the same amount by mouth comes quite near to creosote in value.

Erythrol tetranitrate is apparently increasing in favor; aside from the ordinary conditions favorable for its use, Mattirlo recommends it in lead-poisoning with high arterial tension.

Aaron recommends dram doses of the fluid extract of *Epigea repens* (trailing arbutus or mayflower) for post-prandial gaseous eructations; no explanation of its action has been offered.

Copper as the acetophosphate, in $^1/_6$- to ⅓-grain doses, is an old remedy, recently revived, for the treatment of anemia and chlorosis. Gindicendra reports both an increase in hemoglobin and in red corpuscles.

Hedon finds the acidity of the medicine an obstacle to hemolysis caused by solanin, while its alkalinity favors it. The antihemolytic actions of acid sodium phosphate or sulphate are not specific, for all the free acids and acid substances possess it to some degree. Experimentally it was found that in the rabbit 1.5 cubic centimeter of centinormal hydrochloric acid for 5 drops of rabbit's blood protect this from four to five times the toxic dose. The same properties were proven for all the other acids, even carbonic and such acid amins as asparagin and glycocoll; and the contradictory statements of other authors is due to the fact that they employ insufficient amounts of the acid substances, for with a proper concentration there always will be a modification of the stroma of the globules which renders them impenetrable to the action of solanin. Conversely, the same holds true with alkalies which are fixed and strongly held by the cells. The salts of the blood are not responsible for the slight antihemolytic action which serum exercises toward solanin; they, on the contrary, through their alkalinity, favor it. There is every reason to believe that this effect is due to cholesterin. However, the mixture or combination of the glucosites with cholesterin, while non-toxic toward the red cells and other cellular elements, such as the bronchial epithelium and the epithelium of fishes, preserves all its poisonous properties for the animal as a whole, perhaps because dissociation again occurs, or perhaps because certain cells, as those of the nervous system, again render it toxic.

Of hydrotherapy but little of real advance has been recorded during the past year. One of its devotees has reached the conclusion that "cold water is about the poorest antipyretic"—a fact which has been familiar to therapeutists for some years.

Herter and Richards believe that the observations that intraperitoneal applications of adrenalin were followed by increased amounts of sugar in the urine are explained by the local action of the remedy in the pancreatic cells. A new method of experimentation—direct application of a weak solution to the organ—increased glycosuria. This was not observed when the application of a like solution was made to the liver, kidneys and spleen. If animals had been fed on carbohydrates so that they were on their way from the alimentary tract to the liver, the glycosuria was more marked. The vasomotor action of this substance and increased blood-pressure were experimentally demonstrated to be not responsible for this phenomenon. The real explanation lies in the inability of the cells, under the influence of certain substances, the cyanides among others, to take up oxygen from the blood. Various other reducing substances were tried, sulphurous acid, carbon monoxid, benzyl alcohol, hydroxylamine, ammonium sulphide, piperidine, quinoline and pyridin-like bodies and substances containing them, as adrenalin, produce the same result. If potassium permanganate, chlorine gas of other reducing agents were also used to treat the adrenalin, its application to the pancreas caused no glycosuria effect. Evidently glycosuria and, probably, diabetes depend largely upon the balance between the reducing substances in the blood, some produced in the suprarenal gland, and the oxidation power of certain enzymes, the result of pancreatic cell action. The possibilities of this decidedly new method of research are not to be determined at the present; it is most certainly likely to make real additions to our knowledge.

Quite in line with this is the work of Barnes of Philadelphia, who has contributed some new and important facts to experimental and practical therapeutics. This investigator, working in the pharmacological laboratory of the University of Heidelberg, showed by means of a new convulsion-producing poison (methyl ester-morphoxyl-acetic acid) the exact location of the convulsion center, which was previously unknown. He has also produced two new synthetics which embody material advancements in the treatment of disease. The first of these is an intestinal antiseptic and astringent (hexamethylentetramintannin-protein) which passes through the stomach chemically unaffected and, as proven by both experimental and clinical studies, exerts strong antiseptic and astringent action upon the entire intestinal canal from the duodenum to the rectum. The second of his synthetics is an odorless, non-irritating, non-toxic compound (monoiodi-di-bismuth-methylene-di-cresotinate) which has proven of exceptional value as a dusting powder for surgical use. The feature of this product is that, when brought in contact with wound secretions, it is gradually split up into its components—formaldehyde, iodine, bismuth and cresotinic acid.

In consonance with what was presented on this subject in last year's address, Cushny has reached the following conclusions in regard to the pharmacologic assay: It is a useful substitute for the chemical assay in the case of many remedies in which the latter is not applicable, and it permits the formation of a standard for these preparations which is sufficiently constant and sufficiently exact for therapeutic purposes. It is desirable that such an assay should be made in preparations which fail to effect the desired therapeutic result unless given in quantities which act on important organs, and which are liable to give rise to poisoning if unusually powerful preparations are unknowingly dispensed. This will also be recognized as likely to be of assistance in the line of therapeutic accuracy.

We suggest that while neither the theory is entirely satisfactory nor the practice free from criticism, it is hoped that from its crude presentation something of value may be obtained. Edebohls, from observations upon the results of operations upon a limited number of patients, reaches the following conclusion: From the patient's viewpoint the facts must be recognized that the treatment of chronic Bright's disease by operation forms an entirely new departure; and it will require time, and probably considerable time, before a larger and more definite experience becomes available. In deciding for operation, it must be remembered that renal decapsulation is not directly and forthwith curative of chronic Bright's disease, but that it only leads to a cure or improvement of the disease by establishing circulatory conditions essential to such cure or improvement. The attainment of permanent cure, or of the full measure of improvement possible in a given case, will necessarily require time, during which the patient will, especially in the severer cases, stand in need of the further guidance and treatment of his family physician. The latter will come to regard the operation as one of the measures, albeit the most essential one, necessary to enable him to cope successfully with chronic Bright's disease.

The flood of new synthetics is very sensibly abating, probably because professional credulity has been so overtaxed in the past. Should the report of our Committee on the Bureau of Materia Medica be accepted and the plan put in operation, for the first time in the history of medicine will there be an impartial and at the same time an impersonal report possible and the future of valuable additions to our resources assured. No one who has given this matter thoughtful consideration can fail to be impressed with the urgent necessity for scientific approval or disapproval of substances offered for our use. The plan presented seems to be the only one by which an authoritative verdict can be secured.

The Committee on the Revision of the United States Pharmacopœia has sustained a great loss in the death of our Chairman, Dr. Charles Rice. His accurate and broad technical knowledge, his patient industry and tactful dealing with his colleagues, made the Pharmacopœia of 1890 far superior to that of any other country. Fortunately, one who has been intimately associated with him has been chosen his successor and the work is progressing in a thoroughly satisfactory manner under Professor Remington, who brings to it wide knowledge and untiring energy. When the labors of the Committee are completed the result will be entirely satisfactory to both physician and pharmacist.

In closing this necessarily brief retrospect, I would lay especial emphasis on what is being done by Jones and others in collating the mass of facts and observations grouped together under the head of physical chemistry. It would seem that we are now in a position to take these facts, to generalize upon them to some extent, and to go more thoroughly into the philosophy of the action of substances used in medicine. Just as I have called attention to the importance of the work of Herter and Barnes, so I would emphasize the importance of studying what may be called the third form of matter (atoms and molecules being two), the electrically charged atoms and groups of atoms known as *ions*. The theory of electrolytic dissociation and the underlying doctrine of the ions opens up new methods of investigation and long vistas of not only rational explanation of therapeutic facts, but varied therapeutic possibilities. Protoplasmic movements doubtless take place by means of ions, the electricity-bearing portions into which molecules break down when in solution; and this solution, then, being able to conduct electricity, is called electrolyte. Water seems to cause the best dissociation of molecules into ions, formic acid comes next, then nitric acid, methyl being the superior of ethyl alcohol; acetone, various ethereal salts follow, while the hydrocarbons are of feeble power. When in the presence of galvanic or static electricity certain ions take on a positive charge, they are called cations, while anions are those assuming a negative charge. The cation of acids is hydrogen; the anion of bases is the hydroxyl group (OH). Various theories in regard to nerve impulse and muscle contraction must be rewritten in the light of modern physiology—for example, anesthetics probably prevent nerve conduction by dissolving to some extent the fatty substances prominent in nerve tissue, thus inhibiting the progression which is necessary for conduction. Loeb considers that toxic and antitoxic effects may be due to various alterations in the composition of protoplasm forming living tissue. If a toxin which depends for its activity on a large number of monovalent anions can be controlled by a small number of bivalent anions or even ions of much higher valence (thus requiring a smaller quantity) the question of remedy is apparent. So among antiseptics picric and salicylic acid may be destructive to low forms of life, because they are easily dissociated in the tissue electrolytes and liberate large numbers of poisonous hydrogen cations. Mercuric bichloride and copper cations are for the same reason effective. Ions of high valence are markedly disinfectant; those of lower valence, less so, other characteristics being similar.

Fischer states the same proposition somewhat as follows: Among mercurials the bichloride dissociates more readily when dissolved in water and when so dissociated has the strongest antiseptic action. Since its germicidal action is dependent upon the number of mercury ions in solution, an aqueous is the more efficient solution. The solution is a mercury salt in alcohol—a substance in which no electrolytic dissociation occurs—has no germicidal properties. True had already shown that these statements in regard to alcoholic solutions should be modified by taking into consideration the strength of the solutions. For instance, mercuric chloride dissolved in increasing proportions of ethyl alcohol to water shows increase of toxicity up to 25 per cent. of alcohol and then a rapidly-decreasing toxicity to 98 per cent. The full statement should be that mercury salts ionize less in alcohol than in water and in strong alcohol solutions not at all. Dissociation may be retarded also by introduction into an aqueous solution, instead of alcohol, another salt dissociating the same anions; for example, calomel treated with increasing proportions of sodium chloride shows a steady decrease of toxicity, the cause being the progressive suppression of the formation of mercury ions. A decrease of toxicity may result even when the cations of the chloride is itself toxic, provided it be less toxic than the mercury ion.

Jones states some of these propositions as follows: (1) With the exception of hydrogen dioxide, water is the strongest ionizer. Next to this comes formic acid. Of the more common solvents, methyl alcohol dissociates to a much greater degree than ethyl alcohol. Indeed, it is true in general that in an homologous series of solvents the lesser members have the greater dissociating power. (2) The dissociating power of a solvent appears to be a function of all the physical or chemical properties of a substance and not of any one. (3) The results of a great many experiments tend to show the chemical inertness of molecules. Most, if not all, chemical reactions are reactions between ions, and molecules as such do not enter into the reactions at all. As the reactions proceed, and the ions already present are used up, the molecules are gradually dissociated and furnish new ions, which then enter into the reaction. The chemistry of atoms and molecules has thus given place to the chemistry of ions.

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THE RENAL COMPLICATIONS OF THE ACUTE DIARRHEAS OF INFANCY.[1]

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The literature of this subject is decidedly scanty. The text-books on the diseases of children, as a rule, pay it but slight attention. Holt's is the only one which gives any data founded on actual personal observations. Most journal articles are also of little value, as but few of them are based on actual experience. They show great differences of opinion as to the frequency of renal complications in the acute diarrheal diseases of infancy. It is a striking fact, however, that the great majority of those who have written special articles on the subject are convinced of the frequency of these complications. The anatomical conditions in infancy seem favorable, moreover, to their development. There is, as so well stated by Jacobi, "a predisposition to nephritis in the young caused by the fragility of the blood-vessels in the newly-born; by the relative imperviousness of the young renal capillaries compared with the large size of the renal arteries; by the feebleness of the young intestinal muscle, which proves insufficient to expel toxic contents; by the extensiveness and size of the young intestinal blood-vessels and lymphatics, and the large size of the villi, all of which favor the absorption of toxins."

Morbid Anatomy.—The pathological conditions found in the kidneys by various observers agree pretty closely, although there is much difference of opinion as to their frequency and severity. It is difficult to explain the discrepancy in their results, unless it be that some have studied almost entirely the very acute, rapidly-fatal cases, while others have studied those of more varied and less severe types. Generalized congestion is marked in the very acute cases, but is much less so in the subacute and chronic. Thrombosis of the renal veins with hemorrhage has also been found not very infrequently. Degenerative lesions, granular in type, are common. They are most marked in the epithelium of the convoluted tubules. All degrees of degeneration with changes in the nuclei and epithelial desquamation may be found. The tubules contain casts of various sorts and sometimes blood. Similar but less marked changes are found in Henle's loops and in the straight tubules. In cases of the cholera infantum type coagulation necrosis may also occur. Fatty degeneration is unusual and occurs only in the chronic forms. Glomerular changes are rare. Interstitial changes are very unusual, but are sometimes found in the more chronic cases. Foci of round-cell infiltration are also found among the tubules of the cortex or about the glomerular capsules. Micro-organisms are usually not present. That is to say, the alterations in the kidneys in the acute diarrheas of infancy are mainly degenerative in type, show nothing characteristic, and are similar in every way to those found in other infections, both infants and adults.

Etiology.—Felsenthal and Bernhard are inclined to attribute these pathological changes to the circulatory disturbances and the deficient nutrition of the tissues resulting from the concentration of the blood. They admit that toxic absorption cannot be entirely excluded as a cause, but consider that it plays but a subordinate part, except in the cases in which vomiting and diarrhea are slight and death results from toxemia. Almost all other observers, however, attribute them to the absorption of toxic substances from the intestines. In a few cases bacterial infection of the kidneys also plays a part.

Lesné and Merklen endeavored to determine the part played by bacteria in the causation of these conditions and also the nature of the toxic substances. They fed guinea-pigs with the intestinal contents of infants with green diarrhea and with cultures of colon bacilli or mixed cultures of the colon bacilli and streptococci from these cases. They also injected guinea-pigs with filtered cultures of the colon bacillus.

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[1] Read at a meeting of the Section on Pediatrics of the New York Academy of Medicine, May 8, 1902.

The pigs fed on the intestinal contents all developed a green diarrhea and died in from twelve to twenty-three days. The urine was scanty and contained albumin. Cultures from the organs and blood were sterile. The kidneys showed general intense injection. The capsular endothelium was proliferated in places. The epithelium of the convoluted tubules was granular and desquamated and the nuclei poorly stained. These epithelial changes were most marked in the pig which lived longest. One of the pigs fed on cultures of the colon bacillus died after two months. It had attacks of diarrhea during the last two weeks with diminution in the amount of urine and slight albuminuria. The kidneys were congested and in places the epithelium of the convoluted tubules showed granular degeneration. The other pig fed on cultures of the colon bacillus as well as the one fed on mixed cultures of the colon bacillus and streptococcus thrived. The pigs injected with filtered cultures of the colon bacillus died in from eleven to twenty-four days. Congestive lesions predominated. The epithelium of the convoluted tubules showed localized granular degeneration. There were also foci of leucocytic infiltration, that is, while the colon bacillus or its toxins caused lesions in the kidneys resembling those found in children dead of enteritis, the ingestion of the intestinal contents produced more marked changes, as well as symptoms very like those of enteritis in infants. They conclude, therefore, that the pathogenesis of the renal affection is a complex one, other factors besides micro-organisms being active. These must be the toxic products of fermentation and alimentary poisons.

To sum up, the pathological changes found in the kidneys are chiefly due to the absorption of various toxic substances from the intestinal canal. They are mainly degenerative in type and are best described as acute degenerative nephritis. They differ in no way from the changes produced by similar substances in other diseases. It is reasonable to suppose that similar changes occur in the great majority, if not in all, of the severe non-fatal cases and in many of the mild cases.

Urine.—The changes which are found in the urine of the autopsied cases are those which would be expected from the pathological lesions. The quantity is more or less diminished in amount and the color and specific gravity are increased. The diminution in the quantity and the concentration are due in part to the dehydration from the diarrhea and the diminished ingestion of liquids. It is often turbid and the urates are almost always increased. Albuminuria is present, but usually not in large amounts. The sediment contains casts, usually hyaline, fine granular or epithelial, but sometimes blood. Degenerated renal cells are numerous, but the blood and blood elements are uncommon. There is an excess of uric acid or uric-acid salts.

Similar changes are found in the urine of cases which recover. They sometimes appear early and sometimes late in the course of the disease. They are more common and more marked in the severe than in the mild cases. Albumin may be found without morphotic elements even after centrifugalization. It is fair to assume that these changes are due to the same pathological conditions in the kidneys as in the fatal cases, namely, acute degenerative nephritis. Very few large series of cases with urinary examination have been reported. Those of Von Hoffsken, Epstein, Le Gendre, Koplik, Zamfiresco, Lesné and Merklen, and Morse are the most important. The results in these series have been very different, urinary changes having been found almost constantly in some and in others being the exception. The most satisfactory explanation of these discrepancies is that the types and severity of the cases studied by the various observers were not the same.

Symptoms.—There are also great differences of opinion as to whether or not these renal and secondary urinary changes produce any characteristic symptoms. Koplik thinks that their symptoms may be divided into two classes, the first being general and inseparable from those of the primary disease, while the second are characteristic. These are restlessness relieved only by periods of stupor, persistent vomiting not relieved by lavage, and slight edema of the anterior surfaces of the thighs, legs and feet. These symptoms he regarded as uremic rather than as toxic in origin. Lensné and Merklen consider characteristic dyspnea for which no cause is found on physical examination. They have also seen myosis. They conclude that edema, dyspnea and myosis are the only clinical signs. In my own cases careful study failed to reveal the slightest relation between the presence of albumin and renal elements in the urine and any symptom or set of symptoms. It seems reasonable to suppose, however, that marked renal changes, even if only degenerative in character, may cause so much disturbance of the renal function as to produce symptoms. It would seem difficult, however, to distinguish the symptoms due to this cause from those due to the general toxemia which produced the degeneration of the kidneys as well as of the other organs.

Prognosis.—Still greater differences of opinion exist as to the prognostic import of the renal and urinary changes. Epstein attaches great importance to them. Henoch thinks that "a complicating nephritis may be the cause of death." Lesné and Merklen think that they must be considered in the immediate prognosis. Koplik feels that in many cases the fatal ending is hastened by the renal complications, but that in general the prognosis is not altered. Holt, on the other hand, states that he has "met at autopsy with but a single case in which there was nephritis marked enough to have seriously diminished the patient's chances of recovery or to have formed an important factor in the fatal result." In my own series the urinary changes were not of bad prognostic import. They were present in mild cases and absent in severe and *vice versa*. A number of patients in whom the urine showed no changes died.

Acute degenerative nephritis occurs in all the acute infectious diseases. In them it is not a as a rule regarded as of great prognostic import. There seems to be no very evident reason why it should be considered of any more prognostic importance *per se* in the diarrheal diseases of infancy. It is to be regarded, rather, simply as an index in a general way of the toxemia which involves the organism as a whole. In the rare cases in which the urine shows evidence of more serious renal changes, interstitial or glomerular as the case may be, the prognosis is rendered more grave, as it would be in any acute disease complicated by acute nephritis.

The degenerative lesions presumably always end in restitution *ad integrum*. This is probably the usual result in the case of the other lesions. Certain writers think, however, that these nephritides occurring in the course of the diarrheal disease may explain the origin of some of the chronic nephritides appearing in later childhood the pathogenesis of which is so obscure. This supposition seems reasonable. There is no proof, however, either for or against it.

Pyelitis and Pyelonephritis.—Acute pyelitis and pyelonephritis may occur as complications of acute enteric diseases. They are usually of a mild type and are almost always due to infection by the bacillus coli communis. The symptoms are masked by those of the primary disease. They alter the prognosis but little, if at all.

Cystitis.—Acute cystitis is a not infrequent complication of these diseases. It also is almost always of a mild type. It is usually due to the colon bacillus. Infection may occur through the blood, through the rectum, or in little girls directly through the urethra. The symptoms are usually covered by those of the causative disease and the cystitis is unsuspected. It does not affect the prognosis.

Treatment.—The treatment of these complications is to relieve the primary disease, to favor elimination and to avoid further irritation of the kidneys; in short, the usual treatment of such conditions.

Conclusions.—Acute degenerative changes may occur in the kidneys in the acute enteric diseases of infancy, as in other acute infectious and febrile diseases. There is nothing characteristic about these changes. In rare instances proliferative and interstitial changes may develop. The etiology of these conditions is a complex one, including not only micro-organisms and their toxic products, but also the products of intestinal fermentation and alimentary poisons. The urine shows the changes usually found with such pathological conditions in the kidneys. It is doubtful if these renal complications cause any symptoms distinguishable from those due to the general toxemia. Restlessness, persistent vomiting, unexplainable dyspnea, edema and myosis have, however, been attributed to them and considered characteristic. It is probable that *per se*, except in rare instances, they are of little or no prognostic importance. They are to be regarded rather merely as an index of the degree of toxemia. Recovery from these lesions is usually complete. It is possible, however, that in rare instances they may lead to chronic nephritis in later years. Pyelitis, pyelonephritis and cystitis may also develop as complications. They are usually of a mild type. Their symptoms are generally masked by those of the primary disease. They affect the prognosis but little. The treatment of these renal complications is that of such conditions in general.

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THE USE AND ABUSE OF DIGESTIVE FERMENTS.

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THERE is much irrational prescribing of artificial digestive ferments in our time. The cause of it, as far as I can see, is that in the majority of cases in which these substances are prescribed no correct or logical diagnosis of the stomach or intestinal disease has been made. The prescribing of the digestive ferment is simply a random shot at a target labeled "dyspepsia." Among the other causes of the senseless prescribing, especially of pepsin and pancreatin, are the following facts: These substances may now be considered by-products of the large meat-producing syndicates. The stomachs and pancreatic glands of animals, which were formerly thrown away as useless, can be made a source of income to these already gigantic financial concerns, if the doctors can be duped into prescribing plenty of pepsin and pancreatin. Then, again, these products are so extensively and loudly advertised and pushed in all the lay and medical journals, that a busy general practitioner is generally caught off guard and, confiding to the unashamed exaggerations of these advertisements, prescribes these digestive ferments not only in cases in which they are not needed but even in those in which they actually do harm.

These impressions have been gained not simply from lay patients but from personal histories of sick physicians who gave their own account of the treatment with which they had punished themselves. In 1901 I was consulted by nine physicians, four from Baltimore and five from other cities, who were taking HCl and some of them HCl and pepsin when their gastric secretion on repeated analyses was found to contain an excess of HCl and pepsin. In other words, they were suffering from hyperchlorhydria. At the present writing I am treating a physician who has a chronic atrophic gastritis with impaired gastric peristalsis, whose gastric secretion shows no trace of free or combined HCl. Pepsin and rennin are absent, but pepsinogen and rennin-zymogen are still present. This patient would have been in a logical course of treatment had he perhaps taken the pepsin and HCl mixture; but instead of that he was taking calcined magnesia and bicarbonate of soda, with taka-diastase, a substance which he hardly needed, because the natural ptyalin of the saliva is sufficiently active for amylolysis in the stomach when the gastric acidity is low, for then it has its best opportunity for action.

What ought to be done, instead of spoiling the stomach and making it indolent through lack of exercise by pouring pepsin and HCl into it, is the gradual physiological training to an improved secretion by our physical methods of treatment and by the application of physiological dietetics. We are in a position, in the present light of our knowledge of gastric physiology and pathology, to accomplish this very neatly in the majority of cases. In a general way it can be said that the stomach acts like an indolent school-boy—it will not do by its own inherent powers those things which are done for it. If a stomach secretes less HCl and pepsin than it ought, it is a mistake to give HCl and pepsin as a medicine, for there must be some underlying disease causing the reduction of the secretion, and these substances cannot cure that disease. Worse than this, the stomach very soon adapts itself to the expected dose of ferment; it seems to work less to produce its own ferment; and under such conditions the diseased mucosa generally goes from bad to worse. Here an exact diagnosis and careful analyses of test-meals are necessary.

It would lead me too far to go into the detail of the diagnostic methods. Suffice it to say that some of the gastric diseases, even those that were formerly considered neuroses of secretion, depend upon actually demonstrable histologic changes in the mucosa.[1] Others, however, do not present such changes. In both cases the illogical use of digestive ferments can only do harm. Let us take, for example, the disease known as "hyperchlorhydria," an excessive secretion of gastric juice, of abnormally high percentage of HCl, and containing an abnormally increased amount of the ferments. The ferments pepsin and chymosin or rennin, and the HCl, are the products of different cells in the peptic ducts;[1] but the disease may occur as a simple neurosis, when the autopsy will show no histological changes in the mucosa. It may also occur as a result of hyperplasia of the oxyntic or acid-producing cells of the peptic ducts.[2] In either case the subjective complaints are due to the excess of HCl. There are, however, cases that present all the symptoms of hyperacidity, though the gastric secretion upon analysis shows a perfectly normal degree of acidity. These cases are due to a hyperesthesia of the gastric nerves and I do not refer to them in this discussion. In both types of hyperacidity the administration of ferments is irrational, because too much of these substances is already secreted.

It can safely be stated that whenever free HCl is present in a test-meal, pepsin in sufficient quantities must of necessity be present also. I have recently discovered a case of hyperchlorhydria in which the amount of free HCl was equal to 60, and yet the amount of pepsin seemed to be reduced. A disk of egg-albumin weighing 5 centigrams is digested in four hours by 25 centimeters of gastric filtrate at 40° C.; that is, if the pepsin be present in normal amounts. In this case it took eight hours to digest 5 centigrams of boiled egg-albumin. Now, it might be assumed that pepsin was present in normal amounts, but the great excess of free HCl or other agents present prevented it from exerting its normal proteolytic action. That this was not the case was proven by the following experiment: Twenty-five cubic centimeters of the gastric filtrate containing this excessive amount of HCl were placed in the incubator with a disk of albumin weighing 5½ grams. In a second test-tube 5 decigrams of pure pepsin were added to the same mixture. After three hours the disk of egg-white in the second test-tube was completely dissolved, while the disk in the first test-tube to which no pepsin had been added was not dissolved. I have since examined this patient many times and, though the amount of free HCl fluctuates considerably, there is, as a rule, a reduction in the amount of pepsin secreted when tested in the method first described. I have also tested this gastric juice by Grützner's colorimetric method.[3] Evidently we have here an exceptional case and a somewhat paradoxical one. The patient secretes an excess of HCl, but a reduced amount of pepsin. These cases must be extremely rare, for in a very large number of patients afflicted with neuroses of secretion it is the first one of this kind that I have discovered.

I have gained the impression that it is always best to make the stomach do its own work and not do the work for it. Each cell gains a living by work, and the more it works the better it is nourished and the stronger it grows. Heraclytus used the expression:

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[1] Hemmeter. Diseases of the Stomach, second edition, pp 142-143.

[1] Hemmeter. Diseases of the Stomach, second edition, p. 817.

[2] Hemmeter. Experimental Basis of Dietetic and Medicinal Treatment of Hyperacidity and Gastritis, Jour. Amer. Med. Assoc., Oct. 9, 1897.

[3] Arch. f. d. ges. Physiol., Bd. VIII., S. 542.

πολεμως πατερ παντων

(Strife or work is the father of all).

In the struggle for existence those organisms that do their work best will be classed among the fittest survivors, and similarly the individual cells deprived of work will grow weaker and finally not be able to act at all.

To Fothergill is attributed the saying that digestive ferments are crutches. No doubt many an invalid would prefer walking on crutches than not at all. There are many crutch-walkers, however, who by modern surgery have been enabled to throw the crutches away and walk unaided. Just so with the digestive ferments—they may be used temporarily with apparent success, but the best thing to do is to discover how the patient may be enabled to digest without them.

Pepsin.—There is no lack of pepsin preparations in the market and their digestive powers, as claimed, seemingly have no limit. Certain very popular compositions of pepsin should be emphatically condemned. For instance, all wines of pepsin are inefficient because very little of this ferment is taken up by alcohol. Recently a preparation was brought to our laboratory containing hydrastis, rhubarb, pepsin, and pancreatin in one solution, showing a total disregard for the physiological fact that pepsin acts only in an acid and pancreatin in an alkaline medium. There is rarely any indication for the use of pepsin, for, whenever a test-meal shows free HCl, pepsin of necessity must be present in sufficient amounts; and even when HCl is absent, pepsin or pepsinogen is, as a rule, still present. Assuming a case in which the last vestige of even pepsinogen secretion has been lost, the introduction of the ferment might be of utility; but the enormous quantities of HCl necessary to bring about proper action of this pepsin could not be tolerated by any diseased stomach. And, again, in cases in which pepsinogen is still formed, the addition of HCl simply will suffice to convert it into the complete ferment. Pepsin is prescribed much too often; personally, I have ceased to use it.

Pancreatin.—Although there are many preparations of this ferment and some of them are very active, the substance spoils and loses its digestive power with age. As it is an easy matter to test its amylolytic and tryptic power in artificial digestion experiments, it is wise to do so in all cases in which much dependence is placed on its action. It can be obtained in a liquid form as well as in the form of a dry powder, from extraction of the pancreatic gland of animals. This ferment is completely destroyed in the gastric juice. This is why thinking practitioners should not use both pepsin and pancreatin together in the same solution, because the medium in which one must act is opposed to that of the other. In the majority of cases in which pancreatin is given empirically, HCl is still secreted in the stomach and the ferment is destroyed. It has been suggested by Unna that the pancreatin be inclosed in keratin capsules. Keratin is unaffected by gastric juice, but readily dissolves, it is claimed, in alkaline media. Hence the pancreatin may pass through gastric digestion and at its completion pass into the intestine, where the coating is supposedly dissolved and the ferment acts upon the chyle. But this idea is not supported by experiment nor by exact indications of the conditions for the employment of pancreatin. Keratin will not dissolve in the duodenum except very slowly; pills coated therewith are found in the stools during normal digestion. There is no necessity for attempting to supply the ferment directly to the duodenum, since in the great majority of cases (perhaps all, except when malignant neoplasm, cirrhosis, or abscess has destroyed the gland) there is plenty of pancreatic juice in that part of the bowel. In exceedingly rare cases pancreatic calculi and diseased states of adjacent parts may cause stenosis of the duct. In all these attempts it is overlooked that the reaction of the normal duodenum is acid and will not permit the solution of keratin.

There is but one distinct indication for the use of pancreatin and that is permanent deficiency or complete absence of HCl and enzyme-formation of the stomach. Experiment and experience have conclusively shown that when pancreatic digestion is started in the stomach in these cases by giving the pancreatin with sodium bicarbonate there is more exhaustive utilization of the proteids and carbohydrates. I have frequently assured myself of this fact by analyzing the stools after weighed amounts of these food-substances had been ingested, at the same time making identical analyses with the same amounts of proteid and carbohydrate, but with pepsin and hydrochloric acid as an artificial digestant; with the latter more food-substances passed through undigested than when pancreatin was used.

Pepsin and HCl naturally suggest themselves in atrophic gastritis, but judging from observations pancreatin is preferable. I have noted patients in whom there was a remarkable hypersensitiveness to HCl even in doses of six drops of the dilute form, so that its use had to be dispensed with. The dose of pancreatin is from four to eight grains, together with the same amount of sodium bicarbonate in form of compressed tablets; of these, two to four are taken fifteen minutes after meals.

Pankreon.—This is the latest addition to the articles of ferments. It is a gray, odorless powder, the taste of which is not unpleasant. At a temperature of 40° C., it is capable of digesting 83 per cent. of 100 grams of egg-albumin in fifteen minutes. One gram or 15 grains of pankreon is capable of doing this amount of proteolysis. The advantage that this new preparation possesses consists in its resistance to HCl of the gastric juice, by which ordinary pancreatin preparations are destroyed in about one and a half hours. This preparation is of advantage in cases of achylia gastrica and chronic atrophic gastritis and intestinal atrophy. If examination of the stools shown that a considerable portion of the ingesta passed through undigested, a trial with pankreon is rational, especially if examination of the stools thereafter give evidence of a better digestion.

This should be the chief guiding line for the rational employment of all agents designed to aid the digestive process, *viz.*, careful examination of the stools. If possible, the maladies should be treated without any ferment whatsoever and this will be possible in the great majority of cases. But if the practitioner wish to assure himself as to whether the administered digestive ferment is efficacious let him examine the stools with the Boas stool-sieve before and after the use of the agent. My experience is that in the majority of cases the ferment *per se* cannot effect a very appreciable change in the amount of food digested.

Cases of gastric atrophy and achylia gastrica in which the formation of all the gastric ferments is lost, in my experience, never go hand in hand with total loss of the pancreatic ferments. It is only in the rare combinations of intestinal with gastric atrophy that the use of such a ferment as pankreon seems rational. But we have no right to judge exclusively on theoretical grounds. The amount of food digested and absorbed, over and beyond that which is digested when the ferment is not taken, is the only reliable criterion.

A NEW METHOD OF TREATING THE MORPHINE AND ALCOHOL HABITS.

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SOME months ago I received a letter from Dr. Lott, of Cameron, Texas, stating that he was using massive doses of hyoscine in the treatment of various forms of drug habit with very great success, and asking if I could give any information in regard to what was to him a purely empirical plan of treatment. I asked him to write a paper on the subject, which he did and which was published in the *Therapeutic Gazette* for February, 1902. Since then I have tried the plan in six cases with extraordinary results from the following points of view: First, the patients can take massive doses for days at a time, as much as ¼ grain each day hypodermatically, with no evil effects on any vital function. Second, they suffer very slightly, if at all, from the immediate withdrawal of the morphine, and third, and more surprising, the desire for the drug is largely, if not entirely, dissipated after a few days.

The first case in which I tried this plan was a man of about thirty years of age, who had employed morphine for a long time and who took about twelve grains of the drug by the mouth in each twenty-four hours. It seemed absolutely impossible to break up the habit and his mental condition was rapidly becoming exceedingly bad. The patient was put in the charge of a trained nurse and, under the care of his regular medical attendant, received large doses of hyoscine every hour by hypodermic injection.

The only noteworthy symptoms were the rapid development of the effects which are so characteristic of all the so-called belladonna series. The pupils became widely dilated, the tongue exceedingly dry, and the patient's condition that of a mild, wandering, delirium, accompanied by a certain amount of carphologia and visions of various objects in different portions of the room. These objects, as a rule, were not disagreeable in their character, although on one or two occasions delusions of persecution developed. In this particular case the large doses of hyoscine were continued for a period of over two weeks and then were gradually decreased. At no time were the symptoms which he developed really alarming, although the apathetic condition at one time seemed to demand careful consideration. I have seen this patient's physician during the last few days and he tells me that not only is the man not taking morphine, but that he seems to be improving in every way, has gained ten or twelve pounds in weight, and has not returned to the opiate. Both the patient and his physician consider that the treatment had been very successful It is now several months since the treatment ceased.

The second patient was a woman who came under my care suffering from chronic gastrointestinal catarrh with griping pain for which she had been in the habit of taking morphine for a long time. In this patient also the administration of hyoscine hypodermically, in massive doses, failed to produce any effects which I considered in any way dangerous, but after a few days she decided that she did not care to continue the treatment any longer and passed from my observation. The third patient also passed from my observation before a sufficient time had elapsed to produce a cure. In her instance the morphine habit had been developed owing to the administration of the drug for the relief of pain which depended upon a chronic rheumatoid arthritis. Naturally, the administration of hyoscine did not relieve the arthritic pains of this disease, but she developed all the symptoms of mild hyoscine-poisoning, but she was able to get along without her morphine, so far as any symptoms of collapse such as usually follow its abrupt withdrawal were concerned. She also decided that in view of the condition of her joints she preferred to continue the use of the drug, and she, too, passed from my control, so that I cannot report this case as a one of cure of the habit, but simply as another which fortifies my belief that the administration of these large doses of hyoscine is entirely safe.

The fourth patient was admitted to my service at the Jefferson Medical College Hospital suffering from acute malarial infection, and soon after his admission we discovered he was a morphine habitué. Quinine was administered and the chills stopped. After this was done hyoscine was given in massive doses by means of the hypodermic needle and the characteristic symptoms of wandering delirium with some picking of the bedclothes speedily developed, the morphine being stopped at once. The patient's condition remained excellent so far as his heart and respirations were concerned. When I entered the ward he was attentive to my approach and carried on a perfectly lucid conversation with me in which he expressed himself as feeling very well, but as soon as my back was turned so that his attention was not fixed, his mild delirium began again and the handling of the bedclothes returned.

It is a noteworthy fact that all the patients subjected to this method of treatment that I have seen have expressed themselves as feeling well, when asked questions about their own sensations, and had no serious disorder of the heart or other organs. It is also a noteworthy fact that in some of them the dryness of the tongue passed away after the first twenty-four or forty-eight hours, so that they had not suffered at all from this symptom. While as a rule they do not care to take solid food, I have never had any difficulty in getting them to take liquids in adequate quantities, both for the purpose of flushing the kidneys and giving liquid nourishment.

In still another case, a comparatively young woman who for a number of months had taken ⅓ of a grain of morphine hypodermically every three hours, and at least a pint of whisky in each twenty-four hours, was also given very large doses of hyoscine. For a period of three days hyoscine delirium with mental wandering was very marked, and she says that for those three days she had very little recollection of what took place. Within ten days of the beginning of the treatment, no morphine or alcohol at all having been given, the patient while still receiving these massive doses of hyoscine began to pass from under their influence, her tongue became moist, her mind clear and she herself expressed surprise that she no longer had any desire for either morphine or whisky. Twelve days after the treatment began she asked for solid food and on the thirteenth day complained to me that her appetite was ravenous and that she could not remember when she had had such an insatiable desire for food. During the last four days of these twelve, her mental condition was exceedingly bright and cheerful and she is now progressing rapidly toward what I hope will be a permanent cure. In her case morphine had not been taken for the relief of pain, but in gradually-increased quantities for the relief of nervousness.

Those of us who have seen the suffering of morphine-habitués suddenly deprived of the drug cannot fail to be impressed with the extraordinary ease with which morphine can be withdrawn from such patients when they are receiving hyoscine. The last case that I have mentioned, in which the patient was not only a morphine-habitué, but also an alcohol-habitué, seems to me of extraordinary interest. As I said at the beginning of this note it seems to me very extraordinary that a patient can take such massive doses of hyoscine without developing serious symptoms, that he can be deprived of such large quantities of morphine without passing into collapse, and that all alcohol and morphine can be withdrawn simultaneously and at once without the development of evil symptoms. Dr. Lott certainly deserves a very large amount of credit for his courage in having carried out this plan of treatment, which has given me such good results in a few cases that I shall have no hesitation in applying it in others. While the few cases in which I have tried it do not justify me in reporting this method of treatment as universally applicable, the remarkable results so far obtained and the importance of this subject seem to justify this preliminary contribution to the subject, since Dr. Lott's statement that the method can be used in drug habits other than the morphine habit seems to be endorsed by my own results.

THE COMPARATIVE PHYSIOLOGY OF FAITH CURES.

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If the press is to be believed, we are still in an age of miracles. Hardly a day passes without the chronicling of a "supernatural" cure. A man is healed of palsy by the earnest prayer of his pastor; blindness goes under the magic touch of a peripatetic prophet; malignant tumors melt like snow before the burning glance of a mind practitioner. Varying with the ingenuity of the exponent of a new method of universal healing, or with the genius of the herald of a new creed, the following is numbered by hundreds or by thousands. In this there is nothing new. It can safely be said that never, since its beginning, has society been without its foolish beliefs and its contagious delusions. They have always swept over countries as they now sweep the world. Many writers have recently shown that these will-o'-the wisps after which crowds jostle to-day are the same in character and admit of the same interpretation as those that agitated simpler people in earlier times; and striking analogies have been drawn between our own spiritualists, faith curists, mental scientists, Christian scientists, and the thousand and one similar cults and movements of the past. Prototypes of the psychopathic epidemics of modern times were particularly numerous during the Middle Ages.

The crusades were meaningless and purposeless crazes. The children's crusade, especially, demonstrated the absolute insanity lurking in such movements. In those centuries eastern countries were overrun with Messiahs and divine messengers. A fair type of these, and perhaps the most dramatic, was Zabbataih-Zevi, who lived in the latter part of the seventeenth century. Without directly announcing that he was the Son of God, he impressed the followers who rapidly gathered around him with the belief that he was, and they so proclaimed him. The sect grew with amazing rapidity. Its prophet preached an inflammatory doctrine of emotionalism and free love, and his fame extended rapidly from Asia Minor into northern Europe. In Germany and Holland many Jews sold their property to join the new Redeemer and march with him to Jerusalem. He ended his days in obscurity, but the sect he founded even to-day has scattered followers called Zabbatians.

The dancing manias and the flagellants, while different in detail from the creed of Zabbataih, brought out the same suggestibility, the same contagion, the same crowd movement as characterized the followers of the false Messiah. In demonophobia, or the fear of demons, and in the persecution of witches, history furnishes us evidences of the barbarous cruelty to which man is subjected when common sense leaves him and emotionalism wields him. Martin Luther said that all witches should be killed; James the First justified such action by royal enactment, and the history of the Massachusetts Colony shows all too well how the minds of the Puritans could be swayed when their superstition and fanaticism were appealed to. From such psychopathic epidemics our own differ in form, but they are the same in kind. A Coxey's army marches over us; a Mrs. Nation finds some to follow; a new religion, almost in a single night, dots the land with its artistic tabernacles; but with advancing civilization the contagion has lost most of its dangerous qualities. It would not now be possible for frenzied children to traverse a country on their way to find the Holy Sepulcher. Civilization has largely eliminated cruelty and persecution. In civilized countries to-day believers in the most bizarre religions or professors of the most magic arts need not fear the stake. The spirit of the times is shown in our contagious delusions by the practical method and purpose which characterize them all. The credulous public to-day looks for the prophet who comes bearing gifts—who can cure disease or bring happiness to the mind. Yet the same psychological principle underlies the unreasoning crowd movements of all times. It is the tendency, which some men's minds have at all times and which all men's minds have when acted upon in collections, for impulse to take the reins from the hands of reflection and for imaginatiion to run away with reason.

Since early times philosophers and theologians have maintained that there were two spirits in a man, one working for evil, the other for good, an idea of which poets and novelists have made free use. For this theory modern psychology has established a foundation that many old-time sayings might envy; for with slight changes the subconscious self corresponds with the evil spirit, and the higher or conscious self, the higher personality, with the spirit which works for good. In a normal, well-developed man, we see the subconscious infrequently; in a hysterical girl, on the other hand, it reigns. It would be beyond the scope of this paper to describe in detail how psychology studied these two selves. Suffice to say that by hypnotism many persons can be deprived of their higher controlling consciousness and can be reduced to automatic beings, deprived of self-control and governed in their actions by the person who has induced the hypnosis. Similarly, after certain diseases, the higher personality is deposed and the patients live for longer or shorter periods of time in a trance-like state in which their conduct and action differ materially from the conduct and action which, previously to their misfortune, gave them personal individuality. In both cases personality or consciousness is said to be split up or divided, the higher half having been pushed aside, the lower or subconscious half having full control of the individual, and the individual himself is said to be subconscious.

From the study of such cases psychology has given the following characteristics of the two selves: The higher is attentive, reasons, analyzes, criticizes, acts with purpose rather than from impulse; in it memory is active and accurate. The secondary self is antithetical to this; in it attention is unstable; the ideas leading to conclusions are disconnected; the conclusions which lead to action are arrived at by impulse rather than by reason; deliberation is well in the background, credulity well in the fore. The subconscious self is devoid of originality, its reaction to external stimuli being essentially automatic and traveling the paths of least resistance. Both these selves are present in every man; according as one or the other is in control, the character of the individual is proclaimed. With the first we have the rational, thinking man, deliberate and independent in action, representing the highest degree of mental stability, while persons dominated by the subconscious are credulous, easily influenced and easily led. The summation of their psychological characteristics is feeble-mindedness. Many of this class, through unstable attention, chaotic and slow flow of ideas, and faulty memory, are feeble-minded in all directions. Some, apart from one dominant suggestion, have ordinary intelligence, a few have intelligence above the ordinary, while a still smaller number achieve material success. But with the subconscious self well in the foreground there can be no such thing as genius, as extreme suggestibility implies a servility and submission entirely inconsistent with the soaring independence of genius. A brilliant enthusiast, even though he leads an insane following, may well fulfil the qualifications of genius; but such a one acts independently of others, and is of totally different stuff from those he leads. No genius would follow him. In persons dominated by the subconscious, in those who are morbidly emotional, irreflective and illogical, suggestions however unreasonable may have effects of long duration. Led by a gifted fanatic, such persons may proceed to almost any length of absurd or insane behavior.

Thus are founded creeds without reason and movements without purpose. The consistent following of such movements implies a considerable amount of unoccupied time on the part of the followers. In them, consequently, the laboring classes are little heard of. It is rather in the leisure and semi-leisure classes that adherents are found who not only have time to spare but who, from their very inactivity, are the more ready to listen and to follow. In this connection it is impossible to avoid the observation (without, however, the disrespect implied in the associations of classes) that women and invalids are conspicuous by their numbers. For occupation is vital to the maintenance of an intellectual standard, and discontent and vain imaginings are the handmaids of idleness. It would seem that education should put a bar to such movements, and so, in general, it does. Education, with the implied brain development, has entirely changed their character from the times of the crusades and of the burning of witches. But a certain degree of general education is not inconsistent with feeble-mindedness and some of the followers of such movements pass for, and doubtless are, well-educated people. Are they insane? In the delirium of a moment, in the temporary wild enthusiasm of a crowd, they may be regarded as such by those who wish to stretch the definition of insanity. Doubtless, also, the percentage of the insane among them is high. But the belief in a new creed, however preposterous, or in the efficacy of a dramatic healer, does not in itself constitute insanity. I take it that a man cannot be both a Baptist and a Roman Catholic. Yet the Baptist regards the beliefs of Catholicism as absolute delusions, and the Catholic could hardly imagine himself as embracing the Baptist creed without precedent mental unhingement.

The followers of these movements are universally regarded as sincere in their convictions. Not so the leaders, who rarely escape the imputations of imposters, charlatans, hot on the dollar hunt. Such a view may be grossly erroneous. That advertising quacks, money-making spirit-rappers and divine healers with business managers and press-agents, conform comfortably to such a category, few will question. But in the leader of a well-organized movement there is a dash of genius which implies a belief in himself and in his pretensions. It would be difficult to explain the simple Schlatter attracting and swaying thousands by his eccentric personality unless he believed of himself what the crowd believed of him. Neither, if some trickery be detected, is the cry of "all fraud" necessarily justified. Madame Blavatsky was detected in the most barefaced imposture, but I am none the less willing to accord to her my conviction that fundamentally she believed the tenets of the cult she nurtured, although she employed artificial and silly methods to win to her the doubting and the unconverted.

Psychology classifies the individuals just described as abnormally suggestible and as persons in whom the subconscious is unduly prominent. It is now pertinent to inquire what the subconscious means from the standpoint of biology; in what class of living beings its operations are most evident; what its prominence indicates from the point of view of evolution of the brain. To these questions biology and comparative physiology give suggestive answers.

The study of vital phenomena is a study of reflexes. Life implies that from a certain irritation there results a certain response. In plants the purely reflex character of life is simple of demonstration and unquestioned. The opening of the flower under the influence of light, the closing of the Venus fly-trap on the insect that invades it, the tendency of certain plants to incline toward the sun as they grow, all demonstrate the reflex of protoplasm contracting as a result of peripheral irritation. The common tendencies of certain plants to react in a definite way to stimulation are called tropisms. In low animal forms, also, tropisms are evident as purely reflex acts. But as we proceed upward in the animal scale, the purely reflex character of behavior is more difficult of proof. In the higher animals and in man the simple reflexes are easy of demonstration—*e.g.*, involuntary winking; but it is not so easy to resolve a complex act such as the wagging of a dog's tail into all the component reflex parts of which it may be composed. Yet evidence is accumulating to the effect that most, if not all, of the complicated acts of the lower animals, and many of the complicated acts of man, are merely the combinations of movements which result from mechanical or chemical changes in protoplasm brought about by peripheral stimulations. Loeb ("Physiology of the Brain," Putnams, 1900) has made very interesting experiments along this line, some of which I may cite. They are all to the effect that what are commonly regarded as the instincts of animals are not instincts in the sense that they result from memory or volition on the part of the animal; but that they are a series of reflexes which affect the animal's whole organism, and which are performed quite independently of volition or consciousness; that when an animal is said to do a thing by instinct, it is in reality forced to do it by chemical or mechanical causes acting on its protoplasm and over which it has no control. Loeb believes, for example, that the migrations of animals are not due to instincts, but to the irritabilities of certain peripheral structures and of the connection of the same with the muscles. He cites the periodic depth of migration of pelagic animals. A great many of these animals begin a vertical upward migration toward the surface of the ocean in the evening, while in the morning they migrate downward. It is a remarkable fact that these forms never go below a depth of four hundred meters, which fact suggests that light is the controlling power in these depth migrations; water absorbs the light, and the thicker the layer of water the more the light is absorbed. In experiments on the larvæ of Balanus perforatus, which were known to make periodic depth migrations, Loeb found that these animals were positively heliotropic (that is, they moved toward the light) to a weak light and negatively heliotropic (moved away from the light) to a strong light. Thus the animals when near the surface of the ocean in the strong light are negatively heliotropic and are forced downward; as the light of day passes and weakens, they become positively heliotropic and by evening have again been forced to the surface. The classical instinct of the moth to fly into the flame is generally supposed to be the attraction of the moth by the light and that its flying into it is an act of volition. As a matter of fact, it is forced into the flame; light striking on the wings of a moth produces some chemical effect on the muscles which causes them to contract, and as a result of this contraction the moth is impelled forward. If the light be thrown on the wing of one side only, that wing only moves, and as a result the moth is rotated until the light affects both wings, and then both wings contract and the insect is forced forward toward the light. Other insects may be subjected to similar influences, but in them the rate of speed is such that in approaching the light they receive new stimuli, and diverge from it. But the rate of speed of the flying moth is such that he is fairly in the light before the stimuli to divert him have time to act. An experiment with a variety of butterfly known as the amphipyra is also in point. The amphipyra is a running butterfly and is characterized by its tendency to crawl into cracks and crevices. It has been believed that this tendency was a purposeful one, in that is would protect the insect from danger. To show that this instinct is purely reflex and without purpose, Loeb undertook the following experiment. He placed a number of amphipyræ in a box, on the bottom of which he put some little glass blocks so cut that a butterfly could be sheltered beneath each one. He then covered the box with a cover in two pieces, one of which was translucent and the other opaque. The insects gathered themselves just as much on the side of the box on which the light shown as on the dark side. It is evident therefrom that amphipyræ owe their tendency to crawl into cracks, not to an instinct of preservation, but to the reflex demand that their bodies should be everywhere in contact with a surface. Had it been an instinct of self-preservation, the butterflies in the experiment would have gathered on the dark side, but, as they did not, it is quite evident that their actions in this respect are due to some reflex need of their bodies to be in contact with surfaces and not to preconcerted instinct.

It may seem a long step from the tropisms of these low forms to the conduct of a man, and the analogist who would link too closely together the forced movements of plants and animals with the apparent voluntary acts of human beings might well find himself in error. Yet, to a certain degree, the analogy is incontestable. The respiration, the secretions, the beating of the heart, and the vegetative functions in general are performed independently of higher brain development, are essentially automatic, and can be explained only on the hypothesis of a pure reflex mechanism depending solely for its action upon peripheral stimulation. As we get further away from the purely and evidently material and near the world of mind, the analogy has more breaks in it and the proposition is more difficult of demonstration. But even here man has his tropisms, his inclinations which compel him to action independently of reason or will, his forced movements. The following example shows what complex, coordinated and apparently voluntary acts may occur, while the agent is completely automatic so far as the acts are concerned. It has occurred to me more than once. I start to walk down Fifth Avenue. Though my destination is the west side of the avenue I start from the east side and continue on the east side in walking. I suddenly become conscious long before reaching the destination that I am crossing over to the west side. I have often in crossing stopped to ask myself the reason for crossing in that particular place. On looking back, I would find that a building was going up on the east side of the avenue, or that a platform had been erected over the sidewalk, or that there was some such impediment to pedestrians. But I had acted entirely unconsciously and until I looked back to see was not conscious that the west side offered a better route than the one I had been on. Of course I had seen the obstruction; but the visual stimuli had delivered their message and my muscles had responded in a purely reflex way without my knowledge or control. I did not choose to cross the street, but was forced across without being consulted. Man then, too, like the moth and the butterfly, has his tropisms. He is less dominated by them, however, than are the animals, for it cannot be said that every man under identical external conditions will act in the same way; but it can be said that of ten thousand men under such conditions a certain number will give the same reaction to the same stimuli. Thus, while animals in this sense can be classed *en masse,* man can be so classed only in percentages—a straw showing which way the current of progress is running. He is none the less dominated by them. One of the most evident psychological tropisms in man is to be attracted to what is unusual or unknown; the individual may resist it, but in crowds it is hardly to be overcome. After an accident on the street, people rush to the scene. They cannot hope to gain thereby, they do not expect to do good, they run the risk of seeing something unpleasant, but they go because they cannot help themselves. It cannot strictly be said that they go—they are forced. Man's upward course in development removes him farther and farther from forced movements; its goal is freedom of will. The nearer the goal, the less we see of involuntary tropism. Conversely, the farther from the goal of intellectual perfection, the more evident and dominant the tropisms become, and the more does man's brain in its action resemble the brain of lower forms.

The course of my thesis has been to show that what the psychologist calls subconscious action is for the biologist a tropism; both terms indicate automatism unguided by intellectual control. No man is so perfected as to be free from it, but when it becomes the dominant expression of nervous activity, when a civilized human being in his automatism remains the puppet of inane suggestion, persistently deaf to the higher callings of reason and reflection, he represents the mental state we suppose man to have had when the gap between him and animals was still narrow. He shows that in the process of brain elaboration he has been passed over. He stands a speaking record of the past.

That imperfect developmental forms, of which such a man is a type, should be numerous is entirely consistent with all known facts of evolution. Consequently, our proposition is not disproved because a magic healer draws multitudes in his train, nor because an illogical creed numbers its adherents by hundreds of thousands. Certainly, these deluded enthusiasts are sufficiently numerous to constitute an interesting, if not a serious, social problem: less serious, and with more good points than in the centuries of cruelty and oppression, for to-day certain cults, such as Christian science, doubtless work much good in the class to which they appeal. But the question even to-day is prominent and important. It can be properly met only when the people whom it concerns are understood and an appropriate place in the anthropological scale is assigned to them.

What should be society's attitude toward them? If they are defectives and under the supremacy of a fixed delusion, anyone with the most superficial knowledge of psychiatry will readily see that to argue with them is worse than useless. In fact, argument is impossible, for with them exact terms have no meaning and the syllogism does not exist. If they were amenable to reason, they would not be what they are. Philippics from the pulpit and denunciations from medical societies do not reach the audiences for which they are intended. Further, suggestibility grows fat on notoriety, and opposition is a term easily transformed into oppression, upon which all organized movements flourish. It is as useless in stemming such movements as a picket-fence would be in checking a herd of frenzied cattle. Common sense dictates that the greatest possible latitude be given them. The forbidding of meetings, the annoyance by the police, and similar measures such as the Emperor has instituted against the Christian scientists in Berlin are ill advised and are certain to defeat the object in view. Followers of such movements are far better left to work out their annihilation by themselves. Crazes of all kinds are self-limited and self-destructive. As the herd of frightened horses becomes separated, as the individual animals become fatigued, the stampede is over. So it is in human emotional movements. Internal dissensions occur, the unstable attention of the followers wanes, and a new emotionalism, better adapted to the times, is substituted for the original. The many subdivisions and the many rivals of spiritualism have pushed that particular epidemic from the public eye. With the exposure of the trickery of the talented Madame Blavatsky, the theosophist cult ceased as an important movement. So it must be with them all; they must come, they must flourish, but just as surely they must pass away. While they flourish the one reasonable and effective check for them is legislative and it need be applied only when they threaten public safety and public health. This is a danger which, in our day, is much less serious than most alarmists would have us believe.

MEDICAL PROGRESS.

PHYSIOLOGY.

The Nature of Pepsin.—The veil of mystery which has enshrouded the subject of enzymotic processes in the human body is beginning to fall beneath the hands of careful investigators. That the pepsin usually obtained from the gastric juice and mucous membrane of various animals is not the essential enzyme, but contains this mixed with a number of impurities, is conclusively shown by the latest researches of C. A. Pekelharing (Hoppe-Seyler's Ztft. f. Physiol. Chemie, Mch. 20, 1902). In spite of laborious investigation he did not succeed in obtaining from the gastric mucous membrane a proteolytic enzyme of constant composition. In hundreds of preparations obtained from pigs' stomachs, which preparations had been submitted to repeated processes of purification, it was found that the nitrogen and hydrogen content were in each case respectively constant, whereas the carbon and particularly the phosphorus content were subject to variation, which indicated the presence of impurities. The longer the process of purification was carried out, the smaller was the proportion of phosphorus obtained. He was even able to obtain a pepsin that was phosphorus-free. The author does not deny the possibility that pepsin occurs in the gastric-juice in combination with lecithin, nevertheless he asserts that the activity of the enzyme is independent of the existence of lecithin or of any other phosphorus-containing substance. It was discovered that the mucus with which preparations of gastric juice were contaminated contained a proteid of which phosphorus is one of the constituents. The author agrees with Friedenthal that the proteid body precipitated from solutions of pepsin by heat contains a carbohydrate as well as a pentose molecule. Pekelharing was able to study to better advantage a substance obtained from the mass precipitated by heat, which substance possesses the properties of an acid, soluble in water on the careful addition of an alkali. For this substance the author proposes the name "pepsin-acid," and has learned to recognize it as one of the splitting-products of pepsin. This body belongs to the class of proteids corresponding with other members of this class, both in the nature and the respective proportions of its constituents, and differing from the entire mass precipitated from solutions of pepsin by heat only in respect to the proportion of sulphur. Pepsin prepared from the gastric mucous membrane of the pig and that prepared from the gastric juice of the dog may be placed in the same category. The differences between them may be ascribed to the difficulty with which pepsin is extracted from the mucous membrane in its pure form. Both varieties are, like all the other proteids, levorotatory, but there is no relation between the amount of rotation of the plane of light and the reaction of the solution. According to the author, the fact that the substance obtained from the mucous membrane possesses sufficient purity for a proteid body, indicates that this exceptionally active pepsin is the enzyme *per se,* and does not owe its digestive power to the presence of associated bodies. In the first place, the activity of pepsin is destroyed by heat and at the same temperature as that at which albumin is coagulated. In the second place, as soon as gastric juice is deprived of its albuminous constituent through semi-saturation with ammonium sulphate, it loses its zymotic power. Moreover, the presence of ammonium sulphate is to a large degree inhibitory to the activity of pepsin. It has previously been shown by the author, and later by Nencki and Sieber, that it is possible to prepare active solutions of pepsin that do not give the reactions for proteid bodies; this fact, according to the author, does not negate the idea that pepsin is an albuminous body. The observers just mentioned have advanced certain facts in favor of the proposition that it is possible for the same molecule to display diverse zymotic activities. Without adding anything to this contention, the author inclines to the view of Fisher, as presented in the following metaphor: There are keys constructed in the form of a ring to which are attached side-branches, each one of which fits a different lock. Let any one or more of these attachments be bent or in any other way incapacitated, the remaining branches will nevertheless retain their peculiar property.

The History of Uric Acid Introduced into the Organism.—Of eminent value in all future studies on the pathogenesis of the uric-acid diathesis and gout, is the determination of the effect of the administration of uric acid either by mouth or subcutaneously. It has been generally accepted by physiological chemists that this substance, when artificially administered, disappears as such in the system and reappears in the urine under the form of urea. Some observers have found an increased output of uric acid following its introduction into the alimentary canal, attributing this either to the direct elimination of the unchanged acid, or at least to an indirect increase caused by the leucocytosis following the administration of this agent. To determine whether circulating uric acid is eliminated as such or is transformed into urea, was the object of a research by F. SOETBEER and J. IBRAHIM (Hoppe-Seyler's Zeitschrift. f. physiol. Chemie, Mch. 20, 1902). In the case of uric acid introduced by the mouth, they found that the greater part of it is not absorbed in the alimentary canal; that its presence here causes no changes in metabolism, neither an increased nitrogen elimination nor an augmented production of uric acid. They reached the conclusion that the history of uric acid in the organism can not be studied by watching the effects of its ingestion by the mouth, but that it is necessary to study the effects wrought by the subcutaneous administration of this agent. One of the authors was the subject of the research. After twenty-one days of careful feeding, so as to bring him into nitrogenous equilibrium, a solution containing a mixture of piperazin and uric acid was injected into the cellular tissue of the abdomen. Analysis of the urine showed on the day of the experiment a considerable increase of uric acid, the excess representing 80 per cent. of the uric acid administered. On the following day, when no uric acid was administered, the surplus of this substance in the urine continued, there being eliminated a little over 18 per cent. of the drug previously administered. The excess of uric acid on these two days represented practically all of this substance that had been injected. This was, however, not the only result, for on the three succeeding days there was a continuance of the surplus of uric acid in the urine. This latter fact showed that pathological changes occurred in the organism, which manifested themselves in causing a nitrogenous elimination amounting to 3 grams above the normal. Fever did not accompany this manifestation. The authors draw the following conclusions from their observations: (1) Circulating uric acid is eliminated as such and not as urea; (2) it seems to act as a poison to the tissues, causing an increased production and consequent elimination of uric acid. Whether or not increased leucocytosis occurs in the course of these changes, the authors have not determined. They conclude that their researches afford a new perspective of those diseases accompanied by an increased uric-acid content of the blood, this increase causing by its toxic effects on the tissues a still greater production of uric acid, a "circulus vitiosus" being created. The original increase of this substance may be due to resistance to its elimination, as in nephritis, or certain other unknown factors may come into play, as in gout.

Function of Ferments in the Blood.—The rôle which blood ferments play in intracellular digestion is fully considered by A. C. CROFTAN (Jour. Amer. Med. Assoc., May 3, 1902). In reviewing the origin and final destination of such ferments, his experiments show a close connection between them and living protoplasm even in its most "vital" properties. If 0.01 gram of pepsin be dissolved in 95 c.c. of a 2.75-per-cent.-solution of HCl and 5 grams of fibrin or egg-albumin are added, the latter will be digested in twenty-four hours and the fluid will become clear. If 10 c.c. of this solution be mixed with 85 c.c. of the HCl solution, and 5 grams of fibrin be added, this, too, will become clear. This process can be repeated and not until the tenth time will retardation be observed. If the same dilution of pepsin be made without adding fibrin, no solution of fibrin occurs after a dilution of about 1 to 30,000 is reached. The process resembles a regeneration of pepsin by contact with fibrin—a growth in a suitable medium, *i.e.,* in the absence of a pabulum no growth occurs. The author thinks that this observation carries one a step forward into the borderland that lies between dead and living protoplasm.

Roentgen Rays in Pulmonary Disease.—The value of this agent in the diagnosis of pulmonary lesions depends on the corroboration by the other physical methods of examination, according to A. ABRAMS (Jour. Am. Med. Assoc., May 3, 1902). In the normal lung shadows are usually cast in the apical regions by the muscles of the shoulders, also by certain atelectatic zones due to the incomplete filling of the thoracic cage by the lung. Any lung not distended to its complete physiological capacity offers an obstacle to the transmission of the X-ray and consequently casts a shadow which may be attributed to the presence of pulmonary disease. The necessity of completely filling the lung by forced inspiration or other means before X-ray examination is evident. From an investigation of lung affections, the author found that the majority, if demonstrable by the rays, throw shadows on the screen. The anatomical condition can be interpreted only to a limited degree. Fluid in the pleural cavity or in a tuberculous lung casts more pronounced shadows than a thickened pleura, lung abscess, or bronchopneumonic patch. A lung shadow gives the impression of density and is circumscribed, whereas a thickened pleura yields a less dense and more diffuse shadow. Shadows limited to the center of the lung are not pleurogenic. In focal diagnosis it may be said that the shadow cast in expiration will not differ materially in position or clearness, if the lesion be situated near the screen; if it be distant from the screen, the shadows will be greater and their contours indistinct.

The Transplantation of the Adrenals.—Of great interest is the possibility of transplanting tissues in warm-blooded animals from one part of the body to another. The limitations to which investigations in this field are subject, particularly in the field of the transplantation of parenchymatous organs, have not yet been determined. V. SCHMIEDEN (Pflüger's Archiv f. Physiol., Apr. 5, 1902) has succeeded in transplanting portions of the adrenal glands of dogs to various parts of the same animal experimented upon. The work of Strehl and Weiss, undertaken with reference to preventing death in animals deprived of their suprarenal capsules, by means of portions of suprarenal gland transplanted to other localities, had not succeeded. These investigators sewed both organs in their entirety to the abdominal parieties, sometimes placed them free in the peritoneal cavity, in both cases without success. The same result attended the transplantation of slices of the adrenals. Schmieden states that he has operated with various modifications upon dogs, and transplanted the adrenals as quickly as possible after extirpation. In no case was the entire gland removed, but always slices as large as one-fourth of the organ were transplanted. While small portions placed in the kidney became united to this organ without delay, and were found after six months unchanged both in their macroscopical and microscopical appearance, the author found that in the case of larger portions, particularly when placed in the peritoneal cavity, there resulted a central necrosis, although the peripheral zone remained alive. These results corresponded in every way with those obtained by Von Eiselberg and Enderlen in the transplantation of pieces of the thyroid gland. The fact that certain transplanted portions of the adrenals failed to unite with the surrounding tissues, the author attributes largely to faulty technic. He proposes to repeat these experiments and also to try to graft portions of suprarenal gland from one animal to another, which he has not yet succeeded in doing.

The Temperature-curve in Health.—The rhythmic daily variations observed in the bodily temperature during health are no less significant than those observed during the progress of various diseases. The rhythm to which many physiological processes are subject, as is observed in the case of the respiration and the heartbeat, the consumption of oxygen, the elaboration of carbonic acid and urine, and the general working capacity, is similar to that which is observed in the case of the bodily temperature. According to F. G. BENEDICT and J. F. SNELL (Pflüger's Archiv f. Physiol., Apr. 5, 1902), the question as to what factors influence the body temperature has hitherto been only partly answered. In a long series of observations covering many months, the object of which was to discover the normal temperature fluctuations that occur under different circumstances, and particularly the effect of the reversal of the customary daily routine of activity and sleep, the authors reach the following conclusions: The normal temperature curves of the different individuals experimented upon showed the usual rhythmic changes. The curve of the temperatures taken in the axilla is, considered as a whole, parallel to that of the temperatures taken in the rectum, yet there are fluctuations of the latter of 0.38° above the former and below it of 0.06°. Muscular activity causes a rapid rise in the temperature-curve, which continues as long as the work lasts. Different kinds of work of the same intensity occasion the same rise in temperature. Discontinuance of work is soon followed by a distinct long-continuing fall in the temperature. During the nights following days of severe muscular exertion, the temperature was constantly lower than during the nights succeeding days of rest. The chief influence of fasting consists in the fact that the range of the variation of the curve is diminished. Fasting following severe exertion caused a diminution in the daily temperature variation amounting to 0.6°. The average temperature for a day of fasting following a day of rest was no different from that of the normal daily average, while in the case of a day of fasting following one of hard work, the average temperature was about 1° less. When work was performed during the night, followed by rest and sleep during the day, which conditions were imposed for a period of ten days in a series of experiments, no appreciable tendency to a reversal of the temperature-curve was observed.

The Bile and Saponification.—As ordinarily stated in the text-books, the formation of soaps in the small intestine is brought about by the union of the alkalies of the bile with the fatty acids produced by the splitting-up of the fats. The conditions under which saponification occurs and the determination of the relative quantities of fatty acids and of soaps found in biliary mixtures are discussed by E. PFLÜGER (Pflüger's Archiv f. Physiol., Apr. 5, 1902). In a series of experiments the author has shown that bile in the presence of sodium carbonate and at a temperature of 37° C., is able to bring about the solution of a considerable quantity of fatty acids. This solution can not be accomplished without the presence of bile. His researches seemed to indicate that the solutions contained, besides soaps, considerable quantities of fatty acids in a free form. A general review of his last researches indicated that of the fatty acids dissolved in bile mixtures, only the smaller portion, at most 45 per cent., is dissolved through saponification. The author claims to have established the following conclusion, namely, that strictly speaking no freely dissolved fatty acids occur in bile mixtures, but that the former are present in a loosely combined state. It is remarkable, from both the physiological and the chemical standpoint, that the fatty acids form soluble acid salts, although there is present in the bile enough alkali to form neutral salts. The reason for this is the fact that the carbonic acid contained in the sodium carbonate of the bile has a greater affinity for the sodium than have the fatty acids, the neutral salts of which bind more readily a second molecule of fatty acid, although in a loose form. These significant facts make one understand why the transformation of the fatty acids into a soluble form requires one-half as much alkali as has been deemed necessary. The newer researches of Pflüger show that the quantity of saponified fatty acids surpasses that of the freely dissolved fatty acids. Accordingly the provision has been made for the complete binding of all fatty acids by means of the neutral soaps, which are thus transformed into acid salts. The secret of the physiological significance of the bile in promoting the absorption of fats is to be found in the fact that the cholates dissolve the fatty acids, holding them in loose combination, and thus enable them to react with the sodium carbonate and the already formed neutral soaps. The cholates themselves undergoing no decomposition, a small portion of them have the power to bring about the transportation of a large quantity of fatty acids into neutral and acid salts. Pflüger showed by his investigations that the greatest quantity of fats that can at any time be absorbed can by means of the bile be made soluble in water. Since the action of the bile consists in the formation of neutral and acid soaps, the soluble form of the fats is the first to be taken into account from the standpoint of absorption; the latter can be accomplished without the intervention of bile, but since the bile increases to a great degree the solubility of soaps, its presence in the jejunum and ileum augments the absorption of the soaps that occur there. It is probably in the epithelial cells that the soaps are retransformed into fatty acids and alkali, the former becoming neutral fat, and the latter being taken up by the blood-vessels as sodium carbonate. Thus to the blood is restored the alkali that it has delivered into the intestine for the purposes of saponification. The discovery by J. P. Pawlow that the stimulation of the intestinal mucous membrane with acids causes an abundant flow of alkaline pancreatic juice, furnishes a wonderful example of the self-regulating mechanism serving the needs of saponification. Moreover, fat itself is a powerful stimulus of the intestinal mucosa, whereby larger quantities of pancreatic juice, rich in steapsin, are secreted; and it is the opinion of Pawlow that fat exercises this power even in a neutral medium. This same investigator seeks the significance of this intimate relationship between acid stimulation and the pancreatic flow, in the fact that the alkali of the pancreatic juice inhibits the action of pepsin, favors the splitting action of the pancreatic enzymes, and restores the normal alkalescence of the blood. According to Pflüger, the excess of acids in the intestine produces a deficiency in the alkalies and consequently inhibits saponification, which, according to the author's law of self-regulation, excites the flow of richly alkaline pancreatic juice.

Peptonizing Ferments as Factors in Vital Development.—The most advanced physiological teaching of the day asserts that the most intimate and hitherto mysterious processes that lie at the basis of growth, development and decay, in other words, the entire vital cycle, are bound up with the activity of the enzymes that reside in the protoplasmic cell. The solution of this problem of the zymotic control of life phenomena can not be gained by the study of the complex animal organism, but recourse must be had to the simple unicellular animal or to the plant. Such elementary biological inquiries as are being so diligently prosecuted at the present day can not fail to be of far-reaching importance in the field of practical medicine. In this respect one welcomes the contribution of T. Bokorny (Pflüger's Archiv f. Physiol., Apr. 5, 1902) in answer to the following question: "Do sprouting seeds contain peptonizing or other proteolytic enzymes?" In sprouting seeds the albuminous content is quickly dissolved and decomposed. This process begins with the simple swelling of the seeds. Since the proteid granules of the resting seed are during the process of sprouting dissolved and rendered capable of transportation to other parts of the growing plant, there must be some chemical transformation that brings this about. One would naturally think of the formation of peptone, which is easily capable of osmosis, and of the simple amido-bodies, such as asparagin, leucin, tyrosin, etc. Both transformations of albuminous bodies are known. They can be produced chemically by means of heating with dilute acids, or physiologically by means of proteolytic enzymes. Asparagin and the other amido-bodies have already been found in sprouting seeds; they have not been discovered in resting seeds. The question is whether these amido-bodies are the product of zymotic activity or are the result of the customary protoplasmic processes. Have true peptones been found in sprouting seeds? They have not been discovered in resting seeds, in this respect resembling the amido-bodies. The author succeeded in isolating albumoses in many sprouting seeds, the origin of which he attributes to the action of an enzyme on the globulins of the proteid granules. The attempts to isolate this enzyme have given many contradictory results. Nevertheless, it has been distinctly proved that in the process of brewing malt a definite peptonization goes on.

Influence of Alcohol on Metabolism in Fever.—As with most others, careful analyses have proved to A. Ott (Arch. f. exp. Path. u. Pharmak., Vol. 47, No. 3 and 4) that alcohol in fever prevents proteid dissolution to about the same degree as an isodynamic quantity of carbohydrates. The conclusions to be drawn are that, though alcohol should not be thus employed as food, no contraindications exist as to its use in fever in moderation, and especially in the chronic fevers of pulmonary diseases its general stimulation is but desirable.

OBSTETRICS AND GYNECOLOGY.

Uterus Bipartitus.—An unusual case of twin pregnancy in a bipartate uterus is reported by C. W. Doughtie (Phil. Med. Jour., Apr. 19, 1902). It is interesting to note, first, that the uterus was divided by a septum which extended as low as the os and divided the uterus into two compartments, each of which contained a fetus (at the fifth month), a cord and placenta enveloped by its bag of waters; second, that three twin pregnancies had occurred, each of which had resulted in abortion or miscarriage.

Sarcoma of the Uterine Cavity.—This condition is not so rare as it is generally supposed to be. This is because it is macroscopically confounded with myoma and fibromyoma and a great number of these tumors are taken out by hysterectomy and cast aside as such, without the formality of a microscopical examination. According to A. Marien and O. Normandin (Gazette de Gynéc., Mch. 15, 1902), sarcoma of the uterine cavity is more rare than epithelioma and more rare than the other varieties of uterine cancer which occur as a result of the degeneration of fibromyomata just before or during menopause. These tumors may also be mistaken for hydatidiform mole when pregnancy coexists. Such being the case, the diagnosis from the clinical standpoint is often rendered somewhat difficult.

Living Embryotomy.—Destruction of the fetus after its death is usual enough under well-known circumstances. Occasionally, however, the child's life must be sacrificed in the interests of the mother. G. Zander (Ctlblt. f. Gyn., 1902, No. 14) gives the following as the usual indications: A narrow pelvis causing deviation of the head of the child or danger of rupture of the bladder; extensive plastic operations in the vagina resulting in high-grade scar tissues, and narrowing of its lumen; unusually severe labor pains which drive one shoulder instead of the head deep into the vagina; excessive tonic contraction of the lower uterine segment in badly-nourished and muscularly-weak women, resulting in a very little progress toward delivery, although the uterine muscles may be intensely active; the certainty or likelihood from other signs that after a few more pains or a further delay the child will die and the mother probably suffer; the open question of prognosis for the mother after a Cesarian section, which may or may not save the child and is far more likely to destroy the mother. In all these cases Zander claims embryotomy is the only rational interference. Practically, all of its various methods are reducible to separation of the head or its equivalent. Fritsch and Mermann alone recommend another procedure. Turning their attention to the other pole of the child, Fritsch divides completely the rump with Siebold's shears, while Mermann does a complete evisceration, finding that after it the extraction of the child is very easy. In all cases in which embryotomy is necessary there exists a very narrow pelvis with the child arrested high up in the canal, or an abnormal transverse position with the baby low down in the vagina. Under either circumstance evisceration is technically not difficult and possible within a few minutes. With Siebold's shears one or two ribs are divided, the finger inserted, and the incision enlarged according to the indications. After this all the organs of the chest and abdomen are quickly removed. The amount of space which is thus gained is amazing. The next step consists in one or more of the following details: With the body doubled upon itself, the delivery is completed by slight traction with the fingers. The hand is introduced into the abdomen of the child in order to bring down the pelvis; a foot may be delivered if easily within reach, but has as little warrant as it would have after perforation of the head; decapitation is sometimes necessary with Braun's hook, and will be found far more easy after than before evisceration; the spinal column may be divided according to Fritsch and the baby delivered in halves. The selection of any of these special procedures rests upon technical ease and the interests of the mother and varies with individual cases. If after evisceration space be still lacking, it is probably because the operation has not been done thoroughly. All operators complain of the technical difficulty of decapitation unless an evisceration is done first. It must finally be remembered that this terrible destruction of the child rests entirely upon the question whether or not it will die in a short time, or whether or not by delay the chances of the mother progressively decrease.

Vaginal Hysterectomy for Early Cancer.—One can hope for a favorable result after such an operation provided the disease be confined to the cervix or to the cervix and the mucous membrane of the upper portion of the vagina, or to the cervix, the mucous membrane of the upper portion of the vagina, and, perhaps, to a part of the endometrium. The uterus should be perfectly movable and there should be no glandular involvement, nor any infiltration under the mucous membrane of the vagina. Such cases operated upon at once by vaginal hysterectomy yield gratifying results, says J. F. Janvrin (Amer. Jour. Obst. & Dis. Women & Children, May, 1902). In all cases in which the disease has extended beyond these mentioned limitations, the combined abdominovaginal method is the one to be preferred.

Hydatid Cysts and Dystocia.—Literature contains references to thirty-seven cases in which hydatid cysts have been the cause of dystocia, thirteen cases being reported in France and nine in Germany, says J. Franta (Annales de Gynéc. et d'Obst., Mch., 1902). The condition seems to be more common in multiparæ. The number and size of the cysts vary. They may be situated in the cul-de-sac of Douglas, in the cellular tissue of the pelvis, on either side of the uterus, between the rectum and vagina, between the vagina and the bladder, in the broad ligaments, and in the sacrum. They have also been found in the superior ilio-mesenteric region and in the neighborhood of the liver. These latter, though distant from the pelvis, may be so dragged down that they materially interfere with the progress of labor. The cysts may be so compressible that labor may be ended without their rupture; or labor may only be completed by operative procedures which have for their end the evacuation of the contents of the cysts. In fifty-one cases in which the deliveries were both spontaneous and operative, the mortality for the child was over fifty per cent. The various operations that have been employed have been forceps craniotomy, version and Cesarian section. Three such cases have been reported and in all of them the women died. Two of these were performed before the days of antisepsis. Multiple cysts have shown a maternal mortality of 50 per cent., while single cysts give but 15.8 per cent. mortality.

Blood-examination in Female Genital Disease.—In the diagnosis of female genital affections, the determination of the presence of pus is in many cases so important that all therapy and prognosis may rest upon it. The ordinary diagnostic aids, namely, history, temperature-curve, exploratory aspiration, etc., are not reliable and leave one too frequently in doubt. Curshmann, in 1901, pointed out the relation as characteristic between the white blood-cells and inflammatory processes in or about the cecum and appendix, and emphasized their great importance as a means of diagnosis. He has subsequently been supported in these contentions by other observers, such as Rieder, Von Limbeck, Grawitz and Cabot. Max Duetzmann (Ctlblt. f. Gyn., 1902, No. 14) has recently been making similar observations and records concerning the reaction of the white blood-cells in purulent inflammations in the genital apparatus of woman, seeking to establish it as a diagnostic aid in gynecology. His results are briefly as follows: Whenever there was an exudate, especially with pus or abscess formation, the great increase in the number of white blood-cells always preceded or accompanied the actual appearance of pus. Furthermore, after evacuation of such accumulations of pus, the number of white blood-cells always decreased, provided the drainage was perfect. In cases in which the process was extending, the white blood-cell count was also ordinarily a good guide. His observations showed the full value of blood-examinations. Operation revealed the presence of pus even when from the symptoms it seemed unlikely that it would be found. Examples of this are furnished by cases in which streptococci were present and in which there was comparatively little systemic reaction, as is so often the case, although the danger to the patient was very great. He promises to publish, at no late date, a minute and extensive report of all these observations. They certainly concur with the examinations in surgery and their findings which have been from time to time published within the last one or two years.

A New Operation for Retrodisplacement.—The present operations for this condition, such as Alexander's, hysterorrhaphy, ventrosuspension, are considered transitional by J. M. Baldy (Amer. Jour. Obst. & Dis. Women & Children, May, 1902), so he has devised the following operation to meet all the requirements of the condition. The round ligament on each side of the uterus is picked up and a ligature is thrown about it close to the uterus, so placed as to secure the artery The round ligaments are then severed close to the ligatures. This leaves the uterine ends of the ligaments free and bleeding. The hemorrhage is controlled by a fine ligature applied to each bleeding vessel, or by the sutures which fasten them in the next step of the operation. A pair of forceps is then made to perforate the broad ligament from its posterior aspect (at the point at which the round ligament is cut on the anterior surface), and the cut end (the pelvic end) of the round ligament is grasped in the bite of the forceps and pulled through the hole in the broad ligament (made by the forceps in perforating) until it protrudes on the posterior side of the broad ligament. The opposite side is treated in a similar manner. The cut ends of the round ligaments are then attached to the posterior aspect of the uterus at the cornea, directly back of the original site of the attachment of the round ligaments on the anterior aspect of the uterus. The point of attachment may be higher or lower than this, as may be necessary to accomplish the desired result. As much of the round ligaments may be cut off as is necessary to produce the proper position of the uterus. Thus the uterus remains a pelvic organ and has no artificial supports. It is free to expand in pregnancy and there are no adhesions to give future trouble from pain or possible strangulation of the bowels.

Prolapsus Uteri in Nulliparæ.—A conservative estimate will place the frequency of prolapse of the uterus and vagina in nulliparæ at about one per cent. of all cases of reported prolapse, says H. D. BEYEA (Amer. Jour. Obst. & Dis. of Women & Children, May, 1902). Severe physical effort, kyphosis, dysentery, frequent vomiting, coughing, tuberculosis, and excessive venery are given as some of the rarer causes of the condition. More commonly its subjective etiology is chiefly dependent upon, first, poor health, physical weakness and general tissue relaxation; and, second, frequently upon want of development of the uterus and its support. The exciting causes are laborious occupations and great physical effort, which actively increase the intra-abdominal pressure. The cure must naturally depend upon the general health of the patient and upon the performance of such plastic and abdominal operations as shall positively restore the equilibrium of the uterus and fix the prolapsed structures in natural position.

Kuestner's Incision.—There are numerous methods of entering the abdominal cavity which have for their aim an avoidance of visible scar and of hernia. R. VON FELLENBERG (Ctlblt. f. Gyn., 1902, No. 15) calls attention to the method of Kuestner. The details in outline are as follows: Just above the mons veneris, where the pubic hair is normally present, a long, horizontal incision, convex downward, is made through the skin and superficial fascia down to the deep fascia. The upper and lower margins of the wound are then liberated from the sheaths of the recti, except in the middle line, where the attachment is apt to be more dense and which may be left or divided with the knife. Then through the side which is over the most obvious part of the disease, the abdomen is opened vertically in the usual manner. Fellenberg's records include a large variety of cases and show this incision to be as good as any other in all respects and better than most in that after it is healed and the hair has grown again over the region, the scar is hidden either by the hair or by the fold in abdominal fat or by both.

The Transverse Incision of Phannenstiel.—Similar to the incision of Kuestner is that of Phannenstiel, described with its results by B. DANIEL (Ctlblt. f. Gyn., 1902, No. 15). It is made in the same manner and in the same region as is that of Kuestner, but the sheath of the rectus muscle is divided transversely, while the muscle fibers of the peritoneum are also cut vertically. It will, therefore, be seen that in this method the incision through that all-important structure, the anterior sheath of the rectus, lies at right angles to that through the rest of the opening into the abdominal cavity. Therefore, only at their point of intersection could hernia take place. The results of the operation are exceedingly flattering and its cosmetic advantages obvious, while its adaptability is wide. It is not, however, suitable in pus cases, because it is very difficult to establish drainage.

The Undeveloped Uterus.—Arrest of development of the uterus may occur during intra-uterine life, during infancy, or at the age of puberty, says C. L. BONIFIELD (Amer. Jour. Obst. & Dis. Women & Children, May, 1902). The cause of the arrest of development is not known. The ovaries frequently share in the lack of development. Sterility usually exists. The pubescent uterus is usually the result of chlorosis, incipient tuberculosis, and typhoid fever. Sharp anteflexion is almost always present. No effect on sexual desire or power of gratification has been observed. Dysmenorrhea is a marked symptom and is of the obstructive type. This usually leads to a chronic congestion which in time leads to hypertrophy and profuse irregular menstruation, so that it is at this period that the patient comes to the gynecologist and the enlarged uterus often causes him to mistake the real condition. The anteflexion may change to a retroflexion. Unfortunately, nothing can be done when the condition once exists. If the dysmenorrhea be extreme and does not yield to treatment, removal of the ovaries is a perfectly justifiable procedure. The condition is a rare one, but the percentage would be materially lowered by proper hygiene at the age of puberty.

Co-existing Extra- and Intra-uterine Pregnancy.—Of all the complications to which the pregnant woman is exposed ectopic gestation is perhaps the least frequent. Only 88 such cases have been reported since the year 1708. No pathological condition can be especially charged with the occurrence of this condition. The diagnosis is extremely difficult and has rarely been made before rupture of the ectopic sac, abortion or delivery at term of the uterine fetus, laparotomy or autopsy. The duration is variable, both pregnancies are generally interrupted, the one by abortion or premature labor, the other by rupture of the sac or death of the embryo. There are cases on record in which both were developed to term and both children were born alive. The prognosis is grave for the mother as well as for both children. E. G. ZINKE (Amer. Jour. Obst. & Dis. Women & Children, May, 1902) believes that the treatment will have to be expectant and the patient kept quiet if the diagnosis be made before any of the aforementioned accidents take place.

NEUROLOGY.

Changes Following Removal of the Temporal Lobe.—The rare opportunity of examining the brain of a patient from whom almost the entire temporal lobe had been removed and who died three months later of recurrent melanosarcoma, was afforded to LEDINGER (Deutsch. Arch. f. klin. Med., Vol. 73.) The results showed that all symptoms following so extreme an ablation could be traced to other and secondarily softened or injured parts of the brain and none to the absence of the temporal lobe itself. Before the operation there was, besides general pressure symptoms, a crossed paresis of the lower facial. After the operation there was also a paresis with slight disturbances of sensibility in the left arm and leg which disappeared gradually, so that at the time of discharge from the hospital there remained only a weakness of the extensors of the foot and hand and a slight difficulty in walking. No disturbance of speech existed nor was the musical sense or the power to understand words impaired. The paresis mentioned could be explained by a secondary softening of the frontal part of the internal capsule. A slight disturbance of vision was caused by injury of the optic nerve.

Laryngeal Paralysis of Lobe.—The origin of laryngeal paralysis as it occurs in locomotor ataxia is given by A. CAHN (Deutsch. Arch. f. klin. Med., Vol. 73) as follows: (1) In the large majority of cases there are changes in the peripheral nerve in the form of degeneration of either the intramuscular nerve elements or of the recurrent nerve itself, or of this and the vagus-trunk in the neck, or up to and even into the medulla, with, however, normal central nuclei. (2) In but few cases the nuclei were diseased and in one the nucleus ambiguus showed changes. Even in these, however, the peripheral nerve degeneration was present and was more pronounced than the nuclear changes. Clinically the cases of pure neuritis showed a median position of the vocal cords; in the others, however, there may be uni- or bilateral cadaver position, or median position or disturbance of sensibility. All these paralyses are either stationary or progressive in character and prove a certain predilection of the luetic poison for the larynx.

Relation Between Internal and External Form of the Skull.—Contrary to the generally-accepted opinion, G. Schwalbe (Deutsch. Arch. f. klin. Med., Vol. 73) thinks that to a considerable extent the character of the surface of the brain can be ascertained from the external surface of the skull, particularly on those parts covered with muscle. Four cerebral convolutions of the temporal region form distinct external prominences. Without the use of artificial lines or measurements it is possible by means of palpation to determine the development of different parts of the brain and even of individual convolutions. For the development of craniocerebral topography, this observation is of the greatest importance.

"Dope" in India.—The sensitive, high-strung Hindu, so far in advance of Europeans psychically, naturally falls an easy prey to the various narcotics. Cannabis indica, as is well known, produces in the marvelously refined nervous economy of the Indian ecstatic dreams of a type which cannot be awakened in the clumsy mechanism of the Occidental. Kailas Chunder Bose (Brit. Med. Jour., Apr. 26, 1902) reports a sad series of such cases, most of which had a fatal termination. Cocaine, which has but recently been introduced in India, has taken very largely the place of the less harmful gauja or alcohol or bhaug. Unlike these, it requires but a simple preparation. It is generally taken in the form of powder sprinkled on a paste of slaked lime which is buttered on a betel leaf (Pan, Piper betle). The mass is rolled up and chewed for about fifteen minutes. The first symptom of the so-called hilarity is a heaviness of the head. Then quickly follow a wild throbbing of the arteries of the neck and palpitation of the heart. The pulse never exceeds 110. The inebriate wishes to be left alone; he will not speak lest saliva escapes from the mouth. The ears become hot, the cheeks pale, the nose pinched and cold. The height of intoxication is marked by coldness of the finger-tips and dilatation of the pupils. This stage lasts from thirty to forty-five minutes, when the victim longs for a fresh dose. The teeth and tongue of old habitués turn absolutely black. The craving for an increased dose is pronounced. In one case it was so marked as to cause a jump from gr. i to gr. xij in a month. The worst sequelæ are very obstinate forms of diarrhea and dyspepsia. Of the mental derangements, hallucinations and delusions causing dejection and fear are common. A more miserable object than a confirmed Hindu cocaine-eater cannot be pictured. The drug is altogether more disastrous in its effects than is opium or any other narcotic used in India. To quote the words of a victim, "To eat cocaine is to court misery." It has none of the joys of opium and is infinitely more destructive.

Central Innervation of the Larynx.—The experiments of A. Onodi (Wien. klin. Rundsch., Apr. 20, 1902) show that destruction of the center of phonation in the cortex does not influence phonation, and likewise that destruction of the thalamus opticus, corpus striatum or lentiform nucleus or division of the brain at the level of the anterior quadrigeminal bodies, or lesions of the cerebellum do not destroy the voice. Severing the medulla above the region of the vagus nuclei, however, will at once render the act of phonation impossible, and it seems that the centers are situated in a region upon the floor of the fourth ventricle, extending from twelve millimeters behind the posterior quadrigeminal bodies up to the beginning of the centers of the vagus. In all phonating infants examined in which the skull was perforated to permit delivery this region was intact.

Korsakoff's Disease.—The psychic syndrome present in certain cases of multiple neuritis was, according to S. Soukhanoff (Jour. de Nevrologie, Apr. 5, 1902), first described by the late Prof. Korsakoff. One of the most marked symptoms is failure of memory. This amnesia manifests itself mainly in regard to events of recent occurrence in the life of the patient. The disease can be caused by the following etiological factors: Alcoholism, typhoid fever, influenza, pyemia, icterus, etc. These diseases inhibit the secretory activity of the ductless glands, the internal secretions of which tend to maintain the nutritive centers. When this nutritive equilibrium is disturbed, certain nervous and psychical manifestations appear.

Unusual Localization of Lead Paralysis.—A peculiar case of lead-poisoning was observed by G. Koster (Münch. med. Woch., Apr. 15, 1902) in which, after previous colics and arthralgias, the first symptom of paralysis, instead of being the typical extensor weakness, showed itself symmetrically in the lower extremities. While it is true that cases in which the legs were primarily and chiefly involved have been described before, these have all been of the peroneal type; here, however, only the interossei and the abductor hallucis were involved, leading to great depressions between the toes, flattening of the inner edge of the feet and a general claw-like attitude. Two diseases had to be considered in the differential diagnosis, *i. e.*, the neural type of muscular atrophy and chronic anterior poliomyelitis. The former begins generally about puberty and may occur in other members of the family, while the history and the stationary character militate against the latter. A distinct reaction of degeneration could be obtained in the affected muscles.

HYGIENE.

Quarantine of Vessels from Yellow Fever Ports.—In a reply to an article upon this subject by Drs. Reed and Carroll, published in the Medical Record, E. Souchon (Med. Rec., Feb. 8, 1902) takes exception to several of the rules laid down by them. They have divided all ports from which vessels come into infected and non-infected ports and then place no restrictions upon vessels from the latter. Dr. Souchon believes that reliance cannot be placed upon the authorities of many of the seaport towns along the Gulf and hence the liability of cases being overlooked or not reported is very great. He also cites several cases in which the disease developed much later than the time specified for detention by Drs. Reed and Carroll.

Are Vessels Infected with Yellow Fever?—In a recent paper by Dr. Doty, the Quarantine Officer of the Port of New York, it was stated that, while cases of this disease contracted ashore develop aboard ship, none are contracted aboard the vessel itself. H. R. Carter (Med. Rec., Mch. 22, 1902) has had considerable experience at Southern ports and instances several cases in which patients had been undoubtedly infected after leaving port, for the period of incubation is generally admitted to be not more than from six to eight days and probably never exceeds six and one-half days. The number of infected vessels has been much diminished and since 1893 they rarely reach Southern ports. The diminution is due mainly to the sanitary measures for avoiding exposure to infection in the foreign port and to the substitution of steamships for sailing vessels. It seems to be proven, however, that infected mosquitoes may exist in hidden or unfrequented parts of the ship and communicate the disease to passengers or to crew after they have been out several days. It is in general necessary to disinfect all vessels running between Southern ports of the United States and tropical ports if a case of yellow fever occur aboard, no matter where it be contracted.

Death-rate in Porto Rico.—When the utter lack of sanitary precautions is taken into consideration, it is indeed wonderful that there is not even a greater death-rate among the inhabitants of this newly-acquired possession of the United States. It is said that if it were not naturally one of the most healthy sites on the globe, all the people would long since have been dead from some epidemic or other. P. R. EGAN (N. Y. Med. Jour., Apr. 12, 1902) shows that there is no attempt at any sanitary precautions except in one city and this is very slight. There are 143 huts along the stream from which Ponce receives its water-supply and all the inhabitants dispose of their excreta directly into the river. A most superficial investigation easily explained the cause of the typhoid epidemic last year. The two great causes of death, however, are anemia and tuberculosis, the former being twice as common as the latter. The ankylostoma has been thought by some to be the efficient cause of the anemia, since it is found in nearly every case investigated, but examinations frequently disclose its presence in the stools of the strong and healthy. The writer suggests that the limited variety of foodstuffs upon which the inhabitants subsist may better acount for this blood condition. At least, further investigation is necessary to determine the relationship between the food and these intestinal parasites the eggs of which are omnipresent in the water of the island.

DERMATOLOGY.

Herpes Zoster.—Zona has been ranked successively among cutaneous, infectious and nervous maladies, says DEBOVE (Med. Press and Circular, Apr. 9, 1902). The malady may commence with the eruption to be followed later by the pain. In some cases there may be prodromal symptoms, such as malaise, shivering or vomiting. Neuralgic pain persists after zona has disappeared and may constitute a very serious complication. Facial paralysis may complicate herpes of some of the cranial nerves and the paralysis may persist after the eruption has disappeared. Brissaud has reported three cases of ophthalmic zona followed by hemiplegia on the opposite side, and Raymond has also published a certain number of cases of facial paralysis. There is no absolutely necessary connection between the seat of the eruption and the distribution of the paralysis, as the latter may affect the facial nerve and the zona may be due to affection of the superficial cervical plexus. Those who consider zona an infectious disease say that the paralysis is only another manifestation of the infection. Anatomically, one finds but a negative evidence that the disease is a peripheral neuritis in the majority of the cases examined. The character of the pain is not neuralgic and it does not always follow the course of the nerve. Zona is not due to affection of the spinal cord, but is not improbably due to functional disturbance thereof. Landouzy holds that it is an infective malady because there exist concomitant general phenomena and there are no relapses, the first attack furnishing an immunity just as one observes in many infectious diseases. The author has met with two cases of recurrent zona. Zona is a syndrome which may be met with after trauma, infectious diseases such as influenza and pneumonia, also in poisoning by arsenic, lead, iodides, etc., and even in the course of uremia. The treatment is morphine either beneath the skin or by mouth. The subarachnoidean injection of cocaine gives only temporary relief and is therefore not justifiable. Antiseptic powders and absorbents must be employed to protect the eruption from secondary infection.

Hematuria of Traumatic Origin.—The clinical history of a case of this kind is given by KHOLTSOFF (Bolnichuaja Gazetta Botkina, N. 13, 1902). The patient came to the hospital and stated that since the previous night he had noticed a constant blood in the urine. Urination was neither painful nor abnormally frequent. On the day before his entrance to the hospital he was intoxicated and consequently did not know whether he sustained any trauma. Examination did not reveal anything abnormal in the region of the kidneys; prostate was slightly enlarged. A metal catheter entered the bladder very easily and brought out first bloody urine and then pure blood. The urine as well as the borax solution with which the bladder was washed out came away without any force; it appeared also that not all the fluid injected into the bladder returned. It was supposed that the bladder was torn, and as the general condition of the patient was serious an exploratory laparotomy was performed, but the bladder seemed to be healthy and the laparotomy wound was closed. On the fourth day the hematuria ceased. The patient made an uneventful recovery. A cystocopic examination made on the fifth day revealed numerous ecchymoses just behind the trigonum Lieutaudi. The case was one of incomplete rupture of the bladder.

Venereal Disease in China.—According to ROSANOFF (Russky Vratch, N. 13, 1902), who resides in Mkao, Manchuria, the opinion that syphilis was brought to that part, of China by Russians is not correct; prostitution and syphilis and other genito-urinary diseases are just as much developed in China as they are in Europe. Furthermore he states that Chinese physicians have a special medicine for gonorrhea and a different one for the treatment of syphilis. A Russian soldier, whom Rosanoff treated for subacute gonorrhea and epididymitis, asked his permission to consult a Chinese physician. The latter examined him and then gave some brownish-yellow mixture, of which he ordered him to take about half an ounce at night for three consecutive days and one dose in a week. After each dose the patient had a feeling of general excitement; the pulse was rapid and tense; the urine contained albumin. A week after the last dose the induration of the epididymis was gone and the result of the examination for gonococci was negative. Rosanoff and his assistant, both healthy, then tried the medicine; it produced the same feeling of excitement; albumin appeared in the urine and the pulse became tense and rapid. He has also seen, though he did not follow them so carefully, cases in which the pills which the Chinese physicians give for the treatment of syphilis were effective. He promises to send some of the medicine to Russia for analysis.

SURGERY.

Sympathectomy in Basedow's Disease.—When Iboulay in 1896 cured by sympathectomy a case of Basedow's disease in which he had operated upon the thyroid five times without favorable result, the operative treatment of exophthalmic goiter was given an impulse in a new direction. Since that time sympathectomy has come to be the operation of choice for many surgeons. G. TOMASELLI (Gazz. degli Osped., Apr. 20, 1902) criticizes the various operations which have commonly been performed for the relief of this condition, rejecting all others with the possible exception of partial thyroidectomy, the disadvantages of which are, however, pointed out, and quotes statistics of sympathectomies showing that in 57 cases this operation has brought about a complete cure in 11, and marked improvement in 30 patients so treated. The technic of the operation is discussed by the author and preference is given to incision along the anterior border of the mastoideus as affording a larger and lighter surgical field and being free from the risk of injury to the superficial cervical plexus and spinal accessory nerve, which are jeopardized by incision through the muscle or along its posterior border. In a case which the author reports sympathectomy was followed by a gradual diminution of exophthalmos, tachycardia, and by decrease in the size of the thyroid. Macroscopically as well as microscopically the excised sympathetic ganglion showed abnormalities, the presence of which seems to strengthen the theory that the origin of many of the symptoms in Basedow's disease can be traced to the sympathetic.

A New Surgical Dressing.—The manifold substitutes for iodoform belong to one or the other of two classes, the first comprising those which like iodoform depend for their activity upon free iodin elimination by contact with wound secretions. The second group includes the bismuth compounds, which act as protectives and diminish secretions but have very little antiseptic power. Barnes and Hille (Jour. Am. Med. Assoc., May 10, 1902) have succeeded in producing a synthetic chemical compound from cresotinic acid, formaldehyde, bismuth hydroxide and iodine, which is advanced as a substitute for iodoform and is claimed to be antiseptic, astringent, sedative, desiccating, stimulating to granulations, and non-toxic. No other but the chemical name is given, monoiodid-di-bismuth-methylene-dicresotinate. It is an odorless, insoluble powder containing bismuth 45 per cent., iodine 15 per cent., and formaldehyde 3 per cent. The evolution of the last two is gradual. The authors have observed the use of the powder for six months past in many cases as a postoperative dressing and in active inflammatory processes with disorganization of tissues and excessive discharges, such as burns, abscesses, infected wounds, ulcers, etc.

Thirty Years of Renal Surgery.—It is now more than three decades since Gustav Simon of Heidelberg did the first nephrectomy. A full and valuable retrospect of the work since then is presented by V. Schmieden (Deut. Zeit. f. Chirurgie, Bd. 62). The literature contains histories of 1,118 cases since that first attempt. It is interesting to note the change in the death-rate which has been brought about by improved technic. In the seventies the operation was as often fatal as not. The next decade reduced the mortality to 34 per cent., while the ten years just past saw a further decrease to 17.4 per cent. In addition to the nephrectomies 700 nephrotomies, 54 pyelolithotomies, 34 kidney resections, 141 openings of paranephritic abscesses, and 53 exploratory incisions are discussed. The vital relation of the abdominal section to the lumbar is made clear. In the nephrectomies it was 33 per cent. to 22 per cent. Nephrotomy through the abdominal wall kills 29 per cent.; via the lumbar region 16 per cent. Collapse and peritonitis are by far the most frequent causes of death after nephrectomy. In each of these the percentage is many times greater in those cases in which the abdominal route has been employed. It is probable that the peritonitis in these cases develops, not as a result of infection of the peritoneum at the moment of operating, but as a result of retroperitoneal abscess-formation which subsequently breaks through the weakened membrane. For those who criticize the lumbar operation on the score of inability to examine the opposite kidney there is little ground to stand upon. Admirable results are obtained by a simple and harmless exploratory retroincision which places the organ beneath one's very eye and hand. The remaining criticism against the lumbar operation, *viz.*, that it does not afford sufficient room even with the employment of König's incision, is met by Schede with the removal of the twelfth rib. This requires but a few moments and when carefully done there is nothing to fear from pneumothorax. A very frequent sequel of nephrotomy is fistula. Of the 700 discussed, this resulted in 37 per cent. It is a natural outcome of conservative methods. There are two types of fistula, *i.e.*, those through which urine escapes and those through which it does not. Inasmuch as the great majority of fistulæ are established because of conservative resections and the like, particularly in tuberculous kidneys, it seems that in many cases they should be discontinued. Most fistulæ not resulting from this source come from pyelolithotomies; so constant is this that all stones should be removed through incisions in the cortex. This is a bloodier procedure, but the wound heals much more kindly. Extirpations for malignancy give very depressing results. In the literature, but twenty cases have survived three years without recurrence. This limit is of little value; it does not in any way assure immunity from recurrence. Nephrectomy for unilateral hematuria has been done in sixteen cases; it is indicated only when hemorrhage is very severe and in the presence of what might be called renal hemophilia. Albumin from the other kidney, of course, contraindicates it. Nephrotomy, although older than Simon's operation, has but recently been well established; there is much work to be done upon it ere it is perfected. In nephralgia the cutting of the capsule is often attended by very marked improvement or by cure. Kidney resections have a very limited field. Thirty-four cases are recorded, but of these only half were properly indicated, as in renal injuries, benign tumors and cysts.

Surgery of the Heart.—Until very recently no surgeon was bold enough to attempt operations upon the heart of man, but since 1899 several successful attempts have been made to save life by suturing the wall of the heart after stab-wound. H. L. Nietert (St. Louis Cour. of Med., May, 1902) shows that Ellsberg has performed, perhaps, the most valuable experiments to determine the possibilities in these operations and profiting by these experiments upon the lower animals he has been able to treat successfully at least one case. It has been found that the heart can be grasped with the hand or with forceps and gently compressed with no appreciable difference in its action. It can be penetrated by a needle or knife producing only temporary irregularity. Penetrating wounds made during systole bleed more than those inflicted during diastole, for the wound made during systole has a tendency to gape during diastole. Oblique wounds bleed less than do perpendicular ones, for they are more easily shut off by contraction of the muscle walls. An injury to the right ventricle proves much more serious than does one to the left, on account of the relative thickness of the wall and also because the blood of the right ventricle contains more carbon dioxide and is hence less coagulable. The wounds of the heart heal kindly and the cicatrix is usually complete in fourteen days. Interrupted sutures are better than continuous ones, for the muscle tissue included within the sutures is replaced by connective tissue and there is thus less loss of muscular fibers. By far the most frequent cause of death in heart wounds is hemorrhage—not shock, as was formerly supposed. Hemorrhage may prove fatal in one of two ways: (1) By exsanguination of the body, and (2) by compression of the heart. Exsanguination occurs if the wound leading externally be large or if free bleeding take place into the pleural cavities. Since the pleura is injured in 95 per cent. of the cases, death by exsanguination is most frequent. When the blood flows out into the pericardial cavity and does not find exit from it compression of the heart results and this may continue to complete obstruction to the flow of blood, being manifested by dyspnea and cyanosis. The author reports one of these latter cases which he successfully treated by boldly opening the anterior chest-wall, allowing the blood to escape, and obtaining a good view of the heart-wall, which he closed with two silk sutures. The pleural cavity had evidently been infected, for an empyema followed, but was successfully operated upon later. Recovery eventually followed.

THERAPEUTICS.

Alcohol as an Antidote for Carbolic Acid.—From a study of the local effect of carbolic acid followed by applications of alcohol G. B. WALLACE (N. Y. Univ. Bull., Apr., 1902) concludes that alcohol checks the action of carbolic acid because it is a good solvent of the latter. In order to remove completely the local effects of carbolic acid the application of alcohol must follow quickly, *i.e.*, within five minutes, since the longer the interval the less evident is the antidotal action. Other solvents of carbolic acid, such as ether, benzol and chloroform, are also antidotal to carbolic acid, but are much less suitable for use than alcohol because their marked irritant action conceals their antidotal effects, and ether and chloroform owing to their volatility fail to penetrate sufficiently into the skin to remove the phenol present. By experiments on rabbits and cats Wallace was able to show that alcohol possesses no antidotal action after phenol has been absorbed.

Blood Poisons.—The various drugs which have a deleterious effect upon the blood may be conveniently divided into six classes. The first comprises the agglutinins, which act by changing the physical conditions of the red blood-cells so that they adhere to each other and thus occlude the vessels; ricin and abrin are the two best-known examples. Hemolysins form the second group; these dissolve out the hemoglobin which deposits in the liver and kidneys, while the stromata of the cells form multiple capillary emboli; arseniuretted hydrogen, phallin, helvellic and quillajic acids, senegin, sapotoxin and solanin belong to this group. Chlorate of potassium, pyrogallic acid and chrysarobin constitute the third class, which is characterized by the formation of methhemoglobin. Hydrocyanic acid and carbon monoxide belong to the fourth, in which special hemoglobin compounds are formed. Fifteen metals are capable of entering into union with hemoglobin, thus giving rise to the fifth group, while the sixth is made up of substances such as phenylhydrazin and aniline, which are capable of producing partial necrosis of the erythrocytes. A. KEIL (Arch. Internat. de Pharmacodyn. et de Thérap., Vol. X., No. 1 and 2) has studied the effects of the metals on the blood as revealed by the microscope. Granular degeneration of the red cells was present to a marked degree in all animals, and in those with nucleated red cells it could be seen that the process was really a disintegration of the nucleus within the cell or after extrusion. In mammals, however, normoblasts seemed to play no part in the process. It is probable that the granules represent metallic hemoglobin compounds.

Pharmacology of Iron.—The indiscriminate use of iron as a tonic without attention to the particular indication results in many unsatisfactory effects which are charged to the account of iron. J. AULDE (St. Louis Cour. of Med., May, 1902) believes that attention to certain combinations of iron with other drugs will much enhance its value as a tonic. As a hematinic it must be recognized as a superior remedy, but it must be given in small doses so that the degree of irritation shall not exceed that of gentle stimulation. When impaired nutrition is the dominant factor it may be used in nearly all cases. The addition of nuclein from animal sources is recommended in acute as well as in chronic cases of dyscrasia, thus favoring cell activity. This is especially valuable in cases of catarrh of the mucous membranes, and stress is also laid upon the use of the arseniate in these cases on account of the influence which arsenic has upon systemic metabolism. Attention is called to the exceptional value of iron in combination with zinc as a protoplasmic stimulant.

Respiratory Action of Some Poisons.—Some drugs which are known to affect the respiratory apparatus have again been studied by H. HAYASHI and K. MUTO (Arch. f. exp. Path. u. Pharmak., Vol. 47, No. 3 and 4). They found that with curarine the conductivity of the peripheral ends of the motor nerves are diminished. Irritation of the nerve-trunks by the secondary coil will still reach the muscle at first, but later when the cerebral impulse is no longer active all electricity is ineffective. With fungus poison arrest of respiration takes place owing to paralysis of the phrenic; in large amounts an action similar to that of curarine occurs. Lastly, andromedotoxin was found to affect the motor nerves in such a way that, though they react normally to the electrical and the will impulse, they quickly are paralyzed after a short, strong irritation, but this paralysis disappears after a short rest. Respiratory disturbances are, however, due to centric causes in non-fatal doses; with fatal ones there is exhaustion of the respiratory center.

Action of Demulcents.—To determine whether the group of drugs known as demulcents really possess the property of allaying irritation, H. J. TAPPEINER (Arch. internat. de Pharmacodyn. et de Thérap., Vol. X., No. 1 and 2) conducted a large number of experiments on animals and human beings. A distinct diminished irritability of motor nerves by chemical salts was found in the presence of mucilaginous substances. The same can also be said of sensory nerves since pain appeared later and was less intense than in control experiments. The mucous membranes of the eyes and of the intestines gave less evidence of inflammation when demulcents were added. On the other hand, the cathartic action of drugs is enhanced, since their irritation is prolonged, owing to slowed absorption. It was also found that this absorption is less active in the stomach and the upper part of the intestines and that this holds true for water alone. All these experiments prove that the time-honored custom of using the demulcent to allay inflammation and irritation is based upon scientific facts.

Bufonin and Bufotalin.—The pharmacological action of the active ingredients of the secretion from the skin of lizards, bufonin and bufotalin, was thoroughly studied by E. S. FAUST (Arch. f. exp. Path. u. Pharmak., Vol. 47, No. 3 and 4). The latter closely resembles the drugs of the digitalin group in that it increases the blood-pressure owing to a rise of the pulse-volume and more forcible systolic contraction of the heart. The nervous apparatus of the heart is not influenced by it. After large doses cardiac paralysis with intact sensorium takes place. There is no direct action on the skeletal muscles and no local reaction on injection, as it is rapidly absorbed. Gastric disturbances are very common after both oral and hypodermic administration. The lethal dose is ½ milligram per kilogram. Bufonin in the main has the same action, but is much weaker, as less soluble; if, however, it be dissolved in dilute alcohol and injected it may produce systolic arrest of the heart. Chemically bufotalin differs from the drugs of the digitalis group in that it is a weak acid.

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Subscription Price, including postage in U. S. and Canada

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SATURDAY, JUNE 7, 1902.

THE SARATOGA MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

APART from the social features of the occasion, the coming meeting of the American Medical Association promises to be one of the most interesting in the history of the organization. For New Yorkers there is the prospect of that "consummation devoutly to be wished"—reunion among the members of the medical profession in the State. A prospect, by the way, that with all due modesty we may say is of interest not only to New York medical men but to those of the whole country.

The scientific proceedings, as they can be foreseen from the preliminary program, are to furnish an extremely suggestive and practically useful review of many of the questions that are uppermost in our minds as practitioners. The Section programs of the National Association meetings have in late years departed more and more from the hit-or-miss collections of chance articles, that formerly were almost the rule. Section chairmen and secretaries have evidently given time and thought to obtaining practical papers from men who waste few words, yet have much to say.

In the Section on Medicine the symposium on chronic nephritis promises to furnish a thorough review of the practical and scientific features of this important disease, as it is at present viewed by progressive medical men of varied experience. Some of the best medical schools of the country have representatives among the readers of the papers and the discussion is to be shared by other good authorities. There is also in this Section a most promising symposium on rheumatism and a discussion on gout in the United States.

In gynecology the principal subject of interest is the disposal of pus in the female pelvis. It is evident from the titles of papers that conservatism is to rule the day and that evacuation by the vaginal route, with its low mortality and absence of complications, is to be the conclusion of the discussion.

In the Section on Surgery there are to be discussions on the ever interesting subjects of surgical appendicitis and the treatment of enlargement of the prostate, initiated by well-known authorities on these subjects and shared by other surgeons of wide experience. The gall-bladder and the pancreas are to come in for that share of attention which in late years successful surgery has won for them.

The Section on State Medicine, Hygiene and Sanitary Science announces a symposium on tuberculosis that includes every aspect of that disease and is sure to bring out important features of prophylaxis and treatment, for it is to be handled by men who have been deeply interested in the disease for many years in nearly every part of the United States. This section is also to have symposia on influenza and pneumonia—the latter disease to be considered from the standpoints of its constantly increasing mortality in the midst of a falling death-rate from all other diseases, and of its possible contagiousness and epidemicity and the means to prevent it.

The Section on Children's Diseases is to have a very full discussion on that question of perennial interest—infant-feeding during hot weather.

The symposium on epilepsy in the Section on Nervous Diseases will, it may readily be seen from the titles of the papers, bring out interesting questions in regard to the general management and special treatment of this important and constantly increasing class of patients.

There is not a single section this year that will not prove tempting to the practitioner. The only drawback will be the impossibility of hearing everything one might wish. At this meeting the new arrangement of the business affairs of the

Association will prevent the general assemblies from interfering with section work and will throw the management of routine details, so difficult of proper treatment by large bodies, into the hands of the House of Delegates. There is every reason to think that the American Medical Association this year will surpass all records in interest and in attendance.

PROSTATIC SUPPURATION.

The President of the New York Academy of Medicine, in opening the discussion of Dr. Alexander's paper on abscess of the prostate at the meeting of the Section on Genito-Urinary Diseases before the Academy proper, said that papers such as this did much to offset the prejudice against specialism and served to take the sting from Dr. Oliver Wendell Holme's famous incisive definition that "a specialist is a man possessed of a large amount of useless information." Dr. Alexander's paper (see abstract in the Medical News, May 31, p. 1048) certainly illustrates how much light may be thrown on an obscure subject by patient investigation and how careful study of details in anatomy and pathology may serve in connection with clinical observation to clear up hitherto dubious conditions. Prostatic suppuration thus treated becomes a new and interesting chapter in genito-urinary diseases, while heretofore it has occupied scarcely more than a paragraph on two of the ordinary textbook and has been always described rather conventionally.

For those who have seen what severe sequelæ may follow neglected cases of prostatic suppuration there is little need to insist on the necessity for early recognition of the condition. The fistulous tracts with involvement of all the tissues of the perineum and ischiorectal fossæ that may develop when evacuation of a prostatic abscess has been delayed too long, constitute one of the most annoying and obstinate pathological conditions in the whole range of surgery. It is true that the development of such a state of affairs is fortunately extremely rare. Its severity, however, makes its sure avoidance eminently desirable and justifies the taking of even serious precautions against it. There seems to be no doubt that prostatic suppuration is more frequent than has been thought and Dr. Alexander's demonstrations with regard to the layers of fascia that surround the prostate show that many of the cases of suppuration in the ischiorectal fossæ, which have hitherto been attributed to traumatic causes or infection from the rectum, are really offshoots of suppurative processes in the prostate that have found their way through the connective-tissue capsule of the gland.

Early recognition of the symptoms of prostatic abscess suggested by Dr. Alexander and confirmed by those who took part in the discussion will serve to prevent cases from proceeding to the production of periprostatitis. The occurrence of persistent albuminuria with no kidney condition or bladder suppuration to account for it is an important symptom. Taken in connection with a unilateral enlargement of the prostate, as demonstrated by bimanual examination and the occurrence of leucocytosis, this albuminuria would seem to justify the incision of the prostate if other local symptoms of some serious prostatic condition, as difficulty of urination, heat of the parts, and some tenesmus, be present. To wait as is usually suggested until fluctuation can be detected by the examining finger in the rectum is almost inevitably to subject the patient to all the risks of the pus finding its way into the periprostatic tissues, with lamentable results.

The comparative gravity of the operation heretofore thought advisable for the evacuation of a collection of pus in the prostate has rather encouraged the postponement of surgical intervention until it was manifest that it could not be put off further. The prerectal incision with dissection between the urethra and rectum down to the capsule of the prostate is not difficult, but it makes a large opening between two structures—the urinary and fecal canals—which exposes the patient to many risks of infection, and the healing process is always slow. Dr. Alexander's suggestion that prostate collections of pus be evacuated through the urethra—the method Nature so often employs—is especially worthy of commendation. A perineal section for this purpose is one of the easiest operations in genito-urinary practice, drainage is good, and healing is rapid and satisfactory. This method of treatment, because of its facility, will tempt surgeons to intervene much sooner than has hitherto been the case and will thus prove the best safeguard from the serious complications that so frequently result from delay and the consequent gravitation of infectious material into the periprostatic tissues. This operation will save many of the prolonged suppurative processes in the perineal regions that have proved so annoyingly obstinate to surgical treatment and so discouraging not only to the patient but also to the surgeon. Dr.

Alexander, by faithful investigation and conservative clinical observation in a favorite field, has made a distinct advance in genito-urinary surgery and one that is calculated to redound not a little to the honor of American surgery.

MEDICAL RECONCILIATION IN NEW YORK.

For the first time in many years the American Medical Association holds its annual meeting within the boundaries of New York State. This fact is all the more noteworthy when it is recalled that the national association owes its original organization to the initiative of medical men from this State.

An unfortunate understanding has for nearly twenty years kept the great body of the medical men of New York from sharing the benefits of, or lending the weight of their influence to, the American Medical Association. At length there seems to be a favorable opportunity to heal this breach of fellowship. The New York State Medical Association's invitation to hold this year's meeting of the National Association at Saratoga tion until it was manifest that it could not be put fession of the State should awaken to the realization of what is lost for themselves and medical interests generally by their isolation.

Moreover the members of the profession in the State are practically a unit in sincerely desiring reunion. In the large cities the gentlemen who belong to both the rival State medical organizations constitute a majority of the combined membership. It is evident, then, that reconciliation is to be the watchword at the coming meeting. Only certain technicalities and the personal feelings of a few men can stand against or further delay the termination of a state of affairs that began as a question of principle, but has now become, in the opinion of good authorities, a meaningless persistence in a childish pugnacity. It is easy to see that insistence on formalism may still raise a barrier to the union of the New York medical profession. This, however, would be an extremely mistaken and mischievous policy. Dignified yielding of apparent rights on both sides will do much at this time to remove any tenderness of feelings that may remain as the result of twenty years of separation. The New York State Medical Society certainly deserves the most careful consideration at the hands of the American Medical Association, not only because of the almost parental relation of early days, but because the more liberal policy of later years that has made possible the present union of the medical men of the country was really dictated by the firm stand in the matter taken by the State Society.

Let up hope, then, there will be a proper mutual yielding for the sake of harmony. With a reunited profession in New York State we shall be a long step nearer every wished-for reform in national medical affairs, closer to a national licensing board, a national board of health, and a ministry of public health. *Quod faustum vertat!* In wisdom may all of their differences be adjusted.

THE ACUTE INFECTIOUS FORM OF SYPHILIS.

Syphilis is ordinarily and very properly grouped with chronic diseases; yet even in its most typical form it differs from these, inasmuch as it presents a series of exacerbatory stages, more or less completely separated by intervals relatively free from symptoms. Fournier compared the disease to a drama in several acts, the active stages corresponding to the acts of the drama, the quiescent periods to the intermissions; a simile which leads Senator to remark that *omne simile claudicat;* "for," he declares, "unless it be an opera with musical intermezzi, the entr'acte is free, if not from all discomforts, at least from any relation to the acts of the drama; whereas a similar freedom does not exist, as the careful clinician is aware, during the syphilitic interludes."

Syphilis is so grateful a disease to treat that it is of the utmost importance that cases simulating various acute infectious diseases be promptly recognized and not mistaken for the latter. The details of this differentiation are discussed in a highly enlightened lecture delivered by Prof. Senator as part of the cycle on syphilis and gonorrhea prompted by the Prussian Central Committee.

In from 20 to 30 per cent. of cases of syphilis the constitutional onset of the disease is marked by fever, remittent, intermittent or atypical. The fever is accompanied by the phenomena characteristic of afebrile cases, namely, physical depression, pallor, anemia; nervous phenomena, such as vertigo, headache, pains in the joints and extremities; roseola, splenic enlargement. In distinguishing these cases from measles, the maculo-papular eruption of which may readily resemble forms observed in syphilis, Senator emphasizes the importance of the fever-curve of measles, the conjunctivitis, Koplik's spots and the diazo-reaction, the latter being a constant accompaniment of measles. Scarlet fever calls for attention to the fever-curve, which will be of value only if typical, and to the distribution of the rash, which in syphilis usually attacks those parts of the face which in scarlet fever are spared.

The successful differentiation of variola and syphilis, in difficult cases, Senator declares an impossibility if any set of individual symptoms be relied on. The whole picture will have to be considered in forming an opinion as to the nature of such cases—the anamnesis, the existence of an epidemic of variola, vaccination and revaccination. As a rule, the clinical picture in smallpox is more severe than that of pustulous syphilis.

In considering typhoid fever, attention is directed to the absence of chronic swelling of the lymph-nodes, to the value of the Widal reaction, to the diazo-test. In regard to leucocytosis, Senator quotes Carrière, who found in syphilitic fever a hyperleucocytosis with relative increase of lymphocytes, in contradistinction to the hypoleucocytosis of typhoid fever. Not the least interesting paragraph in this résumé is that which reminds one of the acute diseases of the liver and kidneys which are of indubitable syphilitic origin. Syphilis may present the picture of a simple catarrhal icterus, or of acute hepatic atrophy. Recently E. Hoffmann described two cases of nephritis acuta syphilitica präcox which were remarkable for the extraordinarily large quantities of albumin found in the urine, the albumin in one instance equalling that of the blood-serum. Further reports of cases of acute primary nephritis of syphilitic origin are confidently expected.

ECHOES AND NEWS.

NEW YORK.

Pension Examiners.—The United States Pension Examiners of the State of New York will meet at Saratoga Springs June 9, 1902.

New York Academy of Medicine.—The following physicians have been recommended for election to resident fellowship by the Committee on Admissions: Drs. William Francis Campbell, Charles O. Maisch and William P. Spratling.

American Medical Editors' Association.—The annual meeting of this Association will be called to order in the Y.M.C.A. Hall, Saratoga Springs, N. Y., at 2 o'clock, June 9th. From present indications the attendance will be the largest in the history of the organization and the sessions will be of practical interest and value to medical journalists. The preliminary program includes the following: President's address by Alexander J. Stone, St. Paul; An Evolution in Journalism, by T. D. Crothers, Hartford, Conn.; The Reciprocal Relations Between Physicians and Medical Journals, by Burnside Foster, St. Paul; A Step Forward in Affairs for the Profession, by C. H. Hughes, St. Louis; The Evolution and Influence of Medical Journalism, by Dudley S. Reynolds, Louisville; International and State Medical Comity, by Clark Bell, New York; The Editorial, Its Place in Medical Literature, Frank P. Norbury, Jacksonville, Ill.

The Mayor and the City Institutions.—That Mayor Low is making himself acquainted with the details of the work of the city is daily made apparent. Heretofore pressure of work has prevented him from giving attention to the medical needs of the city. Last week, however, with Charities Commissioner Folks he inspected the institutions on Blackwell's Island and in the afternoon he attended the commencement of the Training School for Nurses on the Island. It is only by such visiting at first hand that the medical needs of this enormous city can be appreciated and it is a subject of congratulation that a step has been made in the right direction.

Changes at the College of Physicians and Surgeons.—As already intimated in the "Medical News," Dr. Abraham Jacobi, who has been for more than thirty years clinical professor of the diseases of children in the College of Physicians and Surgeons, has resigned his office. He was appointed professor emeritus and Dr. L. Emmett Holt was designated to succeed him. Other faculty appointments are as follows: Dr. L. E. LaFetra, instructor in the diseases of children; Dr. A. E. Schmitt, assistant in operative surgery; Dr. R. E. Buffington, assistant in normal histology; Dr. Russell B. Opitz, demonstrator in physiology.

PHILADELPHIA.

New Chair at Jefferson Medical College.—At the meeting of the Board of Trustees of Jefferson Medical College May 24th, a chair of clinical medicine was established for the first time in the history of the institution. Two men were elected to the professorship, Dr. Thomas G. Ashton and Dr. Julius L. Salinger. Both are graduates of Jefferson and have for several years been demonstrators of clinical medicine in that college in addition to serving on the staffs of the Jefferson and Philadelphia Hospitals, Dr. Salinger is associate editor of the "Philadelphia Medical Journal."

Protest Against Removal of the Municipal Hospital.—A strong protest is being made by the residents of the thirty-fifth ward against the location of the Municipal Hospital on the site mentioned in our letter of two weeks ago. Aversion to the proximity of the hospital itself is probably the real basis of the protest, although two reasons are being strongly urged. (1) It is claimed that the site is too far from the center of population, the trip being too long for the best interests of patients, and the roads during portions of each winter are impassable; (2) the reservoirs for the new, filtered water-supply of the city are to be located in that vicinity, where sewage from the institution may contaminate them. A Committee of Councils gave a hearing to the objectors June 2d.

Free Baths in Camden.—Camden is to have free public baths, an appropriation of $15,000 for the erection and maintenance of a bathhouse having been made by Councils.

Philadelphians to Train Nurses in the South.—It is rumored that a project is on foot in this city to establish several training-schools for nurses at various points in the Southern States. These will be for the double purpose of graduating trained nurses and for teaching the rudiments of caring for the sick to members of households. An outlay of at least $2,000,000 is projected. One gift of $250,000 has already been made and another donation of a site for one of the schools is practically secured. Promoters of the project are now in the South on a tour of investigation.

Dr. Finlay Honored.—At the seventy-seventh annual commencement of Jefferson Medical College, held May 29th, the degree of Doctor of Science was conferred on Dr. Charles Finlay of Havana, Cuba, a member of the class of 1855. This honor was conferred on Dr. Finlay in recognition of his contributions to the science of medicine with reference to the etiology of yellow fever.

College Commencements.—That of Jefferson was held May 29th, when a class of 140 was graduated. Hon. Charles Emory Smith delivered the address.—The University of Pennsylvania will hold its 146th annual commencement June 18th. The address to the graduates will be delivered by President Nicholas Murray Butler of Columbia University.

Obituary.—Dr. Cloyes W. Gleason died May 30th at the age of eighty-one. He had practised medicine in this city for more than fifty years.—Dr. Thomas F. Corson, an assistant surgeon during the Civil War, but of late years a real-estate dealer, is dead at the age of sixty-two years.

Woman's Medical College.—Dr. Anna E. Broomall has resigned as head of the department of obstetrics, a position she has occupied since 1878.—Dr. Ella B. Everitt, chief resident physician of the Woman's Hospital, has been elected to the chair of gynecology, made vacant by the resignation of Dr. Hannah T. Croasdale. The Board of Directors has reorganized the several departments of the college and hospital, so that, beginning with September 1st, the heads of departments in the college will exercise authority over the same departments in the hospital.

Reception to Dr. Rixey.—The Medical Club of this city will give a reception to Dr. P. M. Rixey, Surgeon-General of the Navy, at the Art Club June 14th.

Deformity of Nose Corrected by Injection of Paraffin.—Dr. John B. Roberts reported this case at the Philadelphia County Medical Society May 28th. The patient had a deformed nose following a kick which fractured the bones and distorted the septum. Subcutaneous injection of paraffin accomplished very satisfactory correction of the deformity. The material, at a temperature of 105° F., was injected at five or six different points through an ordinary needle, the syringe being previously heated in hot water. The paraffin was brought to the proper melting-joint by the addition of petrolatum. Contrary to expectation, no inflammatory reaction followed the injections. There was slight irritation around the points of entry of the needle and after a few days a little ecchymosis, but no evidence of inflammation. Dr. B. Alexander Randall reported a similar case, satisfactory results being obtained.

Gunshot Wound of Heart.—Dr. L. J. Hammond reported this case. The ball entered the thorax about 1.5 inches above the ensiform cartilage and to the left of the sternum. The patient was brought to the Samaritan Hospital seven hours after injury and was doing so well that operation was not thought to be indicated. He continued to do well, with the exception of temporary elevations of temperature on the sixth, eleventh, and fourteenth days. Because of the freedom from symptoms and the man's urgent desires he was allowed to be up. On the fifteenth day vomiting began and was followed by almost instant death. Autopsy showed a wound of the left ventricle near the apex which had ruptured. The point emphasized by Dr. Hammond was the entire absence of heart symptoms during the life of the patient. The rupture of the wounded joint is believed to have been due to the violent exertion of vomiting, added to the strain of being up previously. It is believed that the patient might have recovered if he had been kept quiet and in the prone posture. This restraint was not indicated by the symptoms.

CHICAGO.

New Hospital Dedicated.—It is estimated that ten thousand persons assembled in the vicinity of St. Mary's of Nazareth new hospital to witness the procession of Polish societies and the dedication ceremonies. In equipment and methods this hospital ranks among the foremost in this country. It is the latest large hospital erected in Chicago, and is said to be the largest private hospital in the West. Six weeks ago seventeen patients were brought there from the old building on West Division Street, and to-day it has 170 patients in its wards and private rooms. The hospital occupies the square bounded by North Leavitt, Thomas, Haddon and Oakley Streets.

Appropriation for Smallpox.—Health Commissioner Reynolds has secured from the City Council $15,000 as an emergency appropriation to enable him to fight smallpox, and he said that most of the money would be used in paying old bills. He asked for $50,000 and got $15,000. The Health Department owes between $12,000 and $13,000 for bills contracted since January 1st in combating smallpox. That will leave $2,000 or $3,000 for current expenses in the smallpox crusade. There have been 203 cases of smallpox since the beginning of the year, and only two or three deaths, but the disease is now taking on a more virulent phase.

Need of Convalescent Hospital.—One of the most urgent needs of this city is a convalescent home or hospital. It is said that from Cook County Hospital alone 60 patients are discharged daily, and many of these are not sufficiently strong to be able to return to work. An institution located in the country would be of great value to these patients.

The Dispensary Question.—Resolutions denouncing the faculty of the College of Physicians and Surgeons for establishing free dispensaries throughout the city were adopted after a heated debate at a recent meeting of the Alumni Association of the College. Representatives of the faculty were present and answered charges made by the Committee on Resolutions. Resolutions declared that the free dispensaries encouraged pauperism and were directly in opposition to the graduates of the institution, who had settled in different parts of the city, only to find that their Alma Mater had surrounded them with free establishments. In answer to the charges, the secretary of the Faculty said that the dispensaries were established for the instruction of the students of the college as well as for the good that could be done for the poorer class.

Election of Officers of Confederation.—The following officers were elected: President, Dr. J. R. Currens, Two Rivers, Wis.; Vice-Presidents, Drs. J. M. Dinnen, Fort Wayne, Ind., and W. F. Curryer, Indianapolis, Ind.; Secretary, Dr. B. D. Harrison, Sault Ste. Marie, Mich.; Treasurer, Dr. W. A. Spurgeon, Muncie, Ind.; Executive Council, Drs. Harvey B. Dale, Oshkosh, Wis., Wm. Bell, Belding, Mich., and J. C. Webster, Lafayette, Ind.

Confederation of State Examining Boards.—A meeting of this body was held May 20th. Representatives from the Wisconsin, Indiana, Illinois and Michigan Boards were present, and the details for the reciprocal exchange of certificates between Indiana, Wisconsin and Michigan were perfected upon the basis of the two qualifications passed at the January meeting of the Confederation, as follows: (1) That a license or certificate of qualification of at least one year's date, and based on presentation of a satisfactory diploma and an examination before a board in specified branches of medicine and surgery, may be accepted at the discretion of a board in lieu of an examination, and as a basis upon which the license of a State may be issued.

(2) That a license or certificate of qualification issued by a State Board of Registration or medical examiners of at least one year's date, based upon presentation of a satisfactory diploma and on the recommendation of a State Board of Registration or medical examiners, as to the reputability of the applicant, may be accepted at the discretion of a board in lieu of an examination and as a basis upon which the license of a State may be issued. The Boards of the above-mentioned States meet in June, and will take such action then as will result in the immediate exchange of certificates.

Interneships.—For the examination for internes at Cook County Hospital, 13 candidates recently appeared from the University of Illinois; 30 from the University of Chicago, and 16 from the Northwestern University Medical School. Of these, 16 received appointments; 8 from Northwestern, 4 from Rush, and 4 from Illinois. The highest mark made by a successful candidate was 421.6; the lowest 366.2. Northwestern men won the three highest marks.

Disinfection.—Through the increase of the force of disinfectors three weeks ago, every call for disinfection has been complied with. This, together with the efforts of the Memorial Institute for Infectious Diseases in making increased provision for scarlet fever cases, gives promise that the spread of contagious diseases may soon be materially checked. Milder weather, by favoring ventilation and sunning of interiors, will also do much toward putting an end to their almost unprecedented prevalence. Advantage should be taken of every sunny day, not only in households where there has been contagious illness, but by every housekeeper.

Promotion of Dr. Bevan.—Dr. Arthur Dean Bevan has been elected professor of surgery at Rush Medical College, to fill the position made vacant by the death of Christian Fenger. Dr. Bevan was graduated from Rush in 1883 and did post-graduate work at the University of Leipzig. From 1883 to 1888 he was an officer in the United States Marine Hospital Service; from 1888 to 1900 professor of anatomy at Rush Medical College, and from 1900 to 1902 professor of surgical anatomy and associate professor of surgery in the same institution.

Lepra Maculoanesthetica.—Dr. David Lieberthal presented a Chinaman, thirty-four years of age, who was born in Hongkong. The patient could give no account of any other illness than the present. About ten years ago, without any preceding sign or sensation, he noticed a discoloration of the skin on the anterior and bilateral aspects of the lower two-thirds of the right limb. The color became lighter and simultaneously the sensibility began to diminish. Gradually the light color changed to brown, which became more marked as time went on. About two years ago he noticed a reddish, flat pimple on the left forearm, just below the flexor surface of the elbow, which gradually increased in size. Soon afterward central portions of the plaque began to flatten and to lose all color, while around its periphery the skin became brown. In this affected area the sensibility gradually diminished, until now no perception remains. A year ago the patient emigrated from China, and on landing in British Columbia, an eruption occurred all over his body of the same character as that now noticed on his face. On the body this eruption is greatly diminished. He remained in British Columbia until a short time ago, when he crossed the border and came to Chicago. Since that time the soles of his feet and palms of his hands feel dry, although they perspire. During all this time no other subjective symptoms than the last named have occurred, except the lack of sensation on the left arm and right leg. The patient presents the following features: The face is covered with an eruption of lentil to bean-sized, irregular spots which are dirty-brown, smooth and shiny. They are infiltrated and slightly raised. The trunk and upper part of the arms show a copious crop of pinkish, non-infiltrated spots, of the same size as those on the face and moderately desquamating. On the back is found a small number of red papules resembling a small papular syphilide. On the left forearm, near and reaching into the cubita, is found a plaque, slightly smaller than one's palm, and showing in the periphery a chocolate-brown, irregularly-defined zone of atrophic skin, and centrally a pinkish, flat infiltration intermingled with white, atrophic areas. In this whole area the sensibility in all its qualities are wanting, also on the whole flexor surface of the forearm, down to the wrist, where the perception for temperature is slightly maintained. The back of the chest is hyperesthetic, as well as the inner aspect of the right humerus. A large area enveloping the right leg in front, and on the sides reaching somewhat above the knee, shows irregular bands of brown, chocolate-colored, atrophic skin, especially in the peripheral parts, while in the center normal skin is intermingled with the slightly leucodermatic. The perception of pain and temperature is completely extinguished, as well as that of tactile sensation. Nowhere does the area of anesthesia correspond to the distribution of a certain nerve. Soles and palms show normal perspiration, but are dry, asteatotic, *i. e.*, without secretion of sebum. Of the accessible nerves, the ulnars as well as the crurals are thickened and slightly hyperesthetic. There is no weakness or atrophy of the muscles. The superficial as well as the deep reflexes are intensified. The glands above and below Poupart's ligament are enlarged. The mucous membrane of the nose, mouth and throat is perfectly normal. No examination of the blood was made up to the time of presenting the case. Considering the stability of the eruption on the face, while it is disappearing on the other parts of the body, the author thinks that a gradual change of the raised efflorescence on the face into nodules will take place within a reasonable time. This supposition seems to be supported by the finding of the small papules on the back which accompany cases of tubercular leprosy as lepra papulosa.

Will Open Hospital.—The Maimonides Hospital Association has been recently incorporated with the object of establishing and maintaining a hospital and dispensary on the West Side, and while the institution will not discriminate against any race or nationality, it is primarily intended to aid the afflicted Jews of the West Side. A hospital sufficiently large to accommodate thirty persons will be opened near Vernon Park on or about June 1st. A benefit performance to increase the hospital fund was given at Glickman's Theatre, Wednesday evening, May 21st.

New Rules for Clinics at the County Hospital.—Warden Healy of the County Hospital has announced some new rules to the internes and attending physicians regarding clinics. He has declared that patients who are likely to suffer any discomfort by going to the clinic will not be required to go. When Mr. Healy took charge of the hospital he adopted rules regarding clinics that were unsatisfactory to some of the medical schools. The Warden replied that he was not of the opinion that Cook County was operating a hospital for the benefit of medical schools. At that time he prohibited operations on women in the clinic room before the students of the medical colleges. The following patients, according to the rule, will not be taken hereafter to the clinics: Any patient who will suffer in any way discomfort or actual injury; any patient who is in danger of sudden death; any patient who would be discontented or displeased because of going to the clinic. These rules were formulated by Dr. McNeill, medical officer of the day. The Warden approved of them, and said that they would be enforced.

Sunstroke in Chicago.—The first death of the season from sunstroke occurred during the past week, and the unseasonably hot weather, although brief in duration, had a decidedly unfavorable effect on the public health, shown chiefly in an increased mortality among infants.

CANADA.

Montreal Civic Hospital.—It has been decided that when the proposed new Contagious Diseases Hospital for Montreal has been constructed the patients will be cared for in the hospital according to their religious belief. The hospital is to be built on the pavilion plan, to consist of a series of buildings converging toward a central administration building, so constructed as to allow of division of the nursing staff according to Protestant or Catholic belief.

Medical Work in Labrador.—According to a letter received recently in Montreal from Dr. Wilfrid Grenfell, the English physician who is devoting his life to the amelioration of the fisher-folk of Labrador, there has been great destitution throughout the country during the past winter. Dr. Grenfell's work ranges from the treatment of a compound fracture to the making of a pair of boots from the skin of a freshly-killed seal. He has lately been successful in having another hospital erected and equipped at St. Anthony on the north French shore. This is the third institution of the kind in Labrador which, with the hospital-ship "Strathcona," serve as laudable charities for the inhabitants.

Consumption Sanitarium Destroyed by Fire.—On the morning of May 21st the Laurentian Sanitarium for the treatment of consumptives, situated at Ste. Agathe des Monts in the province of Quebec, about fifty miles from Montreal, was totally destroyed by fire. The institution was founded and owned by Dr. Arthur J. Richer of Montreal and for five years it had been doing good work for consumptives in the Province. It was in charge of Dr. J. A. Ferguson, who is said to have displayed unusual courage in the face of danger. There were fifteen patients undergoing treatment at the time of the disaster, one of whom, a woman, perished in the flames. The Sanitarium had accommodation for twenty patients, was delightfully situated and had a competent staff of nurses. The loss is said to be in the neighborhood of $15,000. The Gravenhurst Sanitarium has been placed at the disposal of the patients of Dr. Richer.

Montreal Foundling Hospital.—The report of the medical superintendent of the Montreal Foundling Hospital for the past year, which closed on May 15th, shows that at the beginning of the official year there were in residence thirty-two babies. There were admitted during the year 159, making a total of 191 for the year, an increase of twenty-two over the figures of the preceding year. The deaths number 112 for the year. The receipts amounted to $6,538 and the disbursements, $4,779.

A Medico-legal Case on Insurance.—The June number of the Canadian Journal of Medicine and Surgery contains the details of a very interesting medico-legal case from the pen of Dr. Arthur Jukes Johnson of Toronto, medico-legal expert. The widow of the late Dr. Trueman Duncombe of St. Thomas, Ont., brought action against the Mutual Life Insurance Company of New York for recovery of a $5,000 insurance policy on the life of her late husband. Dr. Duncombe, who was a practitioner of good standing in St. Thomas, a man of forty years of age, was examiner for the above company at that city. He held several policies in the company and on July 11, 1901, applied for an additional $5,000. It would appear that he filled in his own examination and had a brother practitioner sign it who was not an examiner for the Mutual Life, but who only a short time previous had passed Dr. Duncombe for another company. The Mutual Life accepted the risk. Dr. Duncombe died suddenly on October 2, 1901. The company paid all his other policies, but refused payment of the $5,000 on the ground of "fraud." Suit was brought by the widow for recovery, when it transpired at the trial that Dr. Duncombe had never been examined as set forth in the policy at all. The questions submitted to the jury were based upon whether Dr. Duncombe had secured the risk knowing that he was not a sound man at the time of the alleged examination. Although no autopsy was held, the experts all considered from the evidence regarding Dr. Duncombe's state of health subsequent to his alleged examination that the cause of death was thoracic aneurism, which must have existed prior to Dr. Duncombe's application for the policy. The action was dismissed with costs.

Personals.—Dr. F. LeM. Grasett, Professor of Surgery in Trinity Medical College, Toronto, is spending the summer in England.—A Sanitarium for Consumptives is to be erected at Vancouver under the supervision of Dr. Ernest Hall of Victoria, B.C.—Dr. Edgar has resigned from the superintendency of the General Hospital at Hamilton, Ont.—Dr. James Stewart of Montreal, Professor of Medicine at McGill, has been elected President of the Association of American Physicians.—Dr. Harris of the Royal Infirmary, Manchester, Eng., is on a tour of inspection of Canadian hospitals for the purpose of acquiring information for use in designing the new building shortly to be erected for the institution which he represents. He will shortly proceed to the United States on a similar mission.—Dr. Charles P. Johns of Kingston, Ont., has been appointed assistant medical superintendent of the Pancras Infirmary in London, Eng.—Dr. H. A. Beatty, Toronto, who recently refused a surgical registrarship at the Westminster Hospital, London, Eng., has been appointed senior surgical officer of the Ontario Division of the Canadian Pacific Railway.—Dr. E. Spragge of Toronto has been made senior medical officer of the same Division.—Dr. G. P. Girdwood has retired from the Chair of Chemistry in the Medical Faculty of McGill University. He has been appointed an emeritus professor of the Faculty of Medicine. Dr. Girdwood has been Professor of Chemistry since 1879.—Dr. Henderson has resigned as senior demonstrator of chemistry in the Macdonald chemistry building at McGill University.—Dr. Bovey, Dean of the Faculty of Applied Science at McGill, has been created a Fellow of the Royal Society of Great Britain.—Sir James Grant, M.D., Ottawa, has been elected President of the Royal Society of Canada.

GENERAL.

Medical Restriction.—Apropos of the withdrawal of the ban upon foreign physicians in Italy, it is stated that the British authorities in Cape Colony have decided to allow the right to practise only to those foreign physicians whose native countries extend a similar privilege to English physicians.

Virchow's Continued Improvement.—Already the sojourn in Teplitz-Schönau has wrought a marked improvement in the distinguished patient; with the aid of canes, and at times with one only, he walks about the corridors of the hotel, and his general condition grows steadily better.

American Roentgen Ray Society.—This society desires to announce that its next meeting will be held in the city of Chicago on December 10th and 11th of the current year. There has been secured a most excellent local committee of arrangements composed of well-known and leading men of Chicago under the chairmanship of Dr. Ralph R. Campbell. This committee further embraces the names of Drs. John B. Murphy, Louis E. Schmidt, M. L. Harris, W. L. Baum, H. G. Anthony and W. A. Pusey. The personnel of this committee gives evidence of the earnest desire of the society to have its meetings entirely ethical and scientific. The very nature and mystery of the X-ray and the tremendous impetus in a therapeutic way, which has been given to its use during the past year, will unquestionably encourage a very widespread abuse on the part of many irresponsible persons. It is the hope of the society to serve a useful purpose in encouraging on the one hand a proper understanding of the uses and limitations of the X-ray, and on the other hand to limit and control the inevitable abuses which are now springing up on all sides. It is hoped that all those who feel an interest in the uses to which the wonderful discovery of Professor Roentgen may be put will bear the date of this next meeting in mind and communicate with the local committee of arrangements, or with the secretary of the society.

Alimentary Hygiene.—A commendable ordinance has been issued in Finistère, forbidding the use of old paper, journals, etc., as wrappings for food, owing to the possibility of spreading disease in this way.

Scientific Establishments in Indo-China.—Medical science is advanced beyond what one would expect in Indo-China, owing to the efforts of M. Doumer, who has founded successively the Pasteur Institute of Nha-Trang; the Bacterial Institute of Saigon, and a Bacteriological Laboratory and Medical School at Hanoï.

Greek Medical Congress.—The Second Greek Medical Congress will be held in Athens from May 17 to 21, 1903.

Medical College of Ohio.—A number of changes and additions have been made which will add greatly to the strength of the school. Among these are the following: The department of surgery will be conducted, didactically and clinically, by Profs. Conner and Ransohoff. Prof. C. A. L. Reed has been appointed to the chair of clinical gynecology, and Dr. A. H. Freiberg to that of orthopedic surgery; Prof. A. V. Phelps will have full control of the anatomical teaching of all classes (three years) and bedside instruction is to be systematically given in both the Good Samaritan and Cincinnati Hospitals.

American Medico-Psychological Association.—The 58th annual meeting of this Society will take place in Montreal June 17th, 18th, 19th and 20th at the Windsor Hotel. The following interesting program has been planned: Dementia Præcox, William Rush Dunton, M.D., Towson, Md.; The Early Diagnosis of General Paresis and the Possible Curability of the Disease in its Initial Stages, E. D. Bondurant, M.D., Mobile; An Analysis of Two Homicides, E. C. Runge, M.D., St. Louis; How Near Akin Are Insanity, Crime, and Degeneracy, J. Elvin Courtney, M.D., Denver; Litigious Insanity, Edward B. Lane, M.D., Boston; The Psychology of Anarchism, James Russell, M.D., Hamilton, Ont.; Conjugal Jealousy as a Cause and Excuse for Crime, from a Medico-Legal Standpoint, Geo. Villeneuve, M.D., Longue Pointe, Que.

Annual Address, by T. Wesley Mills, M.A., M.D., Professor of Physiology, McGill University, Montreal.

Care of the Insane in Brazil, W. H. Kidder, M.D., Ogdensburg, N. Y.; The Organic Sensations in Mental Pathology, Edward Cowles, M.D., Waverley, Mass.; A Case of Adrenal Tumors in the Left Mid-Frontal and Ascending Frontal Convolutions of the Brain, Walter Channing, M.D., W. M. Knowlton, M.D., Brookline, Mass,; Women Nurses in Hospitals for the Insane, A. B. Richardson, M.D., Washington, D.C.; Night Nurses in State Hospitals for the Insane, C. R. Woodson, M.D., St. Joseph, Mo.; Hydriatics as an Adjunct in the Treatment of Insanity, E. C. Dent, M.D., Ward's Island, N. Y.; Therapeutics as Applied to the Treatment of Insanity, Chas. G. Hill, M.D., Baltimore; The Possible Influence of Rational Conversation on the Insane, Jas. M. Buckley, D.D., LL.D., Morristown, N. J.; Instinct as an Important Factor in Medicine, T. J. Mitchell, M.D., Jackson, Miss.; Observations on the Insane Negro, W. F. Drewry, M.D., Petersburg, Va.; The Development of Self-Control, W. H. Hattie, M.D., Halifax, N. S.; Boarding Out for Chronic Insane, J. H. McBride, M.D., Pasadena, Cal.; Some Results and Possibilities in Family Care of the Insane in Massachusetts, Owen Copp, M.D., Boston.

Positions in the Philippines.—On June 17th and 18th there will be held an examination for the position of medical inspector and physician in the Philippine service. These positions are in the Philippine Civil Hospital, Bilibid Prison, Police Department, San Lazaro Hospital, and under the Board of Health, and in some instances include quarters in addition to the salaries named. Some of the salaries are less than $2,000 per annum. In these positions, however, living expenses are usually much less than in Manila, and the opportunity for outside practice perhaps greater. Thirty days' leave of absence is granted each year, exclusive of Sundays and holidays, and those employees who are promoted to $1,800 per annum are entitled to thirty-five days, or about forty days including Sundays and holidays. Appointees will be required to pay their traveling expenses to San Francisco, but the Government furnishes them transportation free of charge on its transports from that point to Manila, but exacts a charge of $1.50 a day for meals while en route, which is returned to the appointee upon his arrival at Manila.

Boric Acid Condemned as a Food Preservative.—The North German Gazette in a semi-officially inspired article says the German Government now speaks the last word regarding the use of boric acid for the preservation of meat. After giving an exhaustive description of a technical investigation and experiments on this subject the paper says: "The sanitary department and the medical authorities are unanimously agreed that the use of boric preparatives to the extent necessary for the preservation of meat should not be permitted."

American Urological Association.—The first annual meeting of this society will be held at Saratoga, June 13th and 14th. The following preliminary program is announced: President's Address, Advances in Urology, by Ramon Guitéras, New York; Exhibition of Renal Calculi, by Robert T. Morris, New York; Diagnosis of Renal Tuberculosis, by John von Glahn, New York; The Technic of Nephropexy, by Augustin H. Goelet, New York; The Knee-chest Position for Operation on the Ureters, by Howard A. Kelly, Baltimore, Md.; Stone in Ureter, with Report of Five Cases, by Orville Horwitz, Philadelphia, Pa.; The Importance of Separating Kidney Urines, by A. J. Downes, Philadelphia, Pa.; Cystoscopy in the Female, by Wm. R. Pryor, New York; Cystoscopy in the Male, by Wm. K. Otis, New York; Tuberculosis of the Bladder, by J. B. Bissell, New York; Operative Indications in Prostatic Hypertrophy, by H. H. Young, Baltimore, Md.; Permanent Results, Failures and Relapses Following the Bottini Operation, by F. Kreissl, Chicago, Ill.; A Study of Twenty-three Cases Treated by Perineal Prostatectomy, by A. H. Ferguson, Chicago, Ill.; The Diagnosis and Treatment of Chronic Prostatitis, by Winfield Ayres, New York; The Diagnosis and Operative Treatment of Prostatic Hypertrophy, with Reports of Cases and Exhibition of Specimens, by Bransford Lewis, St.

Louis, Mo.; Treatment of Uremia, by Egbert H. Grandin, New York; Tuberculosis of the Genito-urinary Tract, with Report of Cases and Conclusions, by Granville MacGowan, Los Angeles, Cal.; Outlines of Microscopical Urinalysis, by Louis Heitzman, New York; A Sketch of the Chemistry of the Urine, by Heinrich Stern, New York; A Case of Pregnancy Complicated with Pyonephrosis, by Charles G. Cumston, Boston, Mass.; A New Silver Salt in the Treatment of Urethritis, by Geo. K. Swinburne, New York; Failures in the Irrigation Treatment of Gonorrhea, by Ferd. C. Valentine, New York.

Obituary.—Dr. T. Ritchie Stone, one of Washington's most prominent physicians, died suddenly at his home last week. He was complaining during the earlier part of the day of a slight pain in his chest, but the trouble was thought to be an attack of indigestion and no serious thought was given it until he was found unconscious in his room. His death was due to heart failure. Dr. Stone was an old resident of Washington, having been born there, in the same house in which his death occurred, in 1857. He received his early education in the local schools and later took his degrees from the University of Virginia.

Prof. Adolf Kussmaul, who introduced the stomach-pump into medical practice, is dead. He was born in 1822, near Karlsruhe. Prof. Kussmaul was one of the physicians called to San Remo, Italy, in the month of October, 1888, to attend the German Prince Imperial, Frederick, later Emperor Frederick III., and the professor was one of those who pronounced himself most decidedly against the treatment followed by the English surgeon in charge, Sir Morell Mackenzie. After the custom of German professors he taught successively at various universities, beginning with Heidelberg, in 1855, and ending with Strassburg. Of his books the one which attracted most attention was "Störungen der Sprache" (the pathology of speech) which formed one of the Ziemssen handbooks. Other subjects to which he contributed original material are vaccination, epilepsy, and nervous diseases in general.

OBITUARY.

DR. W. M. ORD.

By the death of Dr. Ord of St. Thomas' Hospital, London, the profession of Great Britain has lost one of its most distinguished members. Many physicians on this side of the Atlantic will hear of his death with regret, as in his visits to this country he had made an enduring impression. Dr. Ord was a clinician of an unusual type. In the first place he had the great advantage of some years in general practice with his father. He was a good field naturalist, and to the end enjoyed the study of botany. Many will recall a delightful lecture a few years ago in the Lancet called, I think, "A Naturalist's Holiday." Only this time last year when he was in this country in response to an invitation to visit one of the cities and take part in a medical gathering, the reply came that he could not tear himself away from the beauties and novelty of a spring in the Connecticut Valley. Much of his common-sense way of looking at medical problems may be attributed to the attitude of mind fostered by these studies, and then he was a good clinical chemist and interested in the problems of metabolism and crystallization. Add to these a wide culture, a love of literature, and an unbounded enthusiasm in his work, and success was assured. Though his hospital appointments came comparatively late in life, Dr. Ord utilized the splendid opportunity which St. Thomas' Hospital offered, and soon acquired reputation and a large consulting practice. He will always be remembered by one brilliant piece of work—he named and made myxedema a familiar disease. The writer has always felt that in this connection Dr. Ord's work has, in some quarters at least, not received the recognition which it deserves. Gull described the disease, but only the energy and the perseverance of Ord gained for it a general recognition. The "Report on Myxedema" of the Clinical Society is one of the most noteworthy contributions to medicine made by the British School, and a large share of the credit is due to Dr. Ord, the chairman of the committee.

William Osler.

CORRESPONDENCE.

BYWAYS OF MEDICAL LITERATURE.—V.

Terminologic Prudery.

A recent book of advice to young men and women written by a New York physician contains a reference to the old story that certain Hindu religious fakirs in the East spend their time in gazing upon their "abdominal centers." We do not know how many of the readers of the book will recognize their good old-fashioned navels under this new-fangled title. Surely this is carrying prudery of language beyond all rational bounds. At least the scientific name umbilicus might have been used with perfect propriety, or, if not, directions might be given in a note to say "prunes and prisms" directly after reading it so as to get rid of the dark brown taste the horrid word leaves behind it. How many young minds will be set thinking all sorts of things by finding that their navels are so improper. We may expect presumably soon to have the awful name navel oranges replaced by some such elegant circumlocution as "abdominal center oranges" and no one will ever breathe again that there is an anatomical peculiarity by which the very good who get to heaven may pick Adam and Eve out of the crowd. Verily, we are getting too good for our surroundings and a universal transmigration of the race may be shortly looked for whenever a New York physician cannot find it in his heart to say navel right out.

Ruskin and His Physicians.

Literary folk have never been noted for their faithful attention to physicians' prescriptions nor, be it said, proscriptions. They are apt to have a feeling that puts them above the observance of regulations that may serve very well for ordinary people. We are not so surprised, then, to find the following letter of John Ruskin with regard to his physicians in the article by Mr. Joline on "Meditations of an Autograph Collector" in the May number of Harper's Monthly, though we may sympathize with the physicians of so headstrong a patient.

"My Dearest Tom: Really your simplicity about naughty *me* is the most comic thing I know, among all my old friends. *Me* docile to doctors! I watched them (I had three) to see what they knew of the matter; did what they advised for two days; found they were utterly ignorant of the illness and were killing me. I had inflammation of the bowels, and they gave me ice! and tried to nourish me with milk! Another twelve hours and I should have been past hope. I stopped in the *middle* of a draught of ice-water, burning with insatiable thirst—thought over the illness myself steadily—and ordered the doctors out of the house. Everybody was in an agony, but I *swore* and raged till they had to give in—ordered hot toast and water in quantities, and mustard poultices to the bowels. One doctor had ordered fomentation; that I persevered in, adding mustard to give outside pain. I used brandy and water as hot as I could drink it, for stimulant—kept myself up with it—washed myself out with floods of toast and water—and ate nothing and refused *all* medicine. In twenty-four hours I had brought the pain under—in twenty-four more I had healthy appetite for meat, and was safe—but the agony of poor Joanna! forced to give me meat, for I ordered roast chicken instantly—when the doctors, unable to get at me, were imploring *her* to prevail on me not to kill myself, as they said I should. The poor thing stood it nobly, of course; none of them could move me one whit. I forced them to give me cold roast beef and mustard at two o'clock in the morning! And here I am, thank God, to all intent and purpose quite well again—but I was within an ace of the grave—and I know now something of doctors that—well, I thought Molière hard enough on them—but he's complimentary to what I shall be after this. Thanks for all your good love—but *do* try to understand me a little better—indocilest, when I choose, of human creatures—but yours, most affectionately,

"John Ruskin."

Poor Ruskin was queer in many other things besides his opinion of physicians and their ways. He was ordinarily of too robust health to appreciate medical things much. It is the literary man as a confirmed invalid, such as Stevenson was, who learns to realize how much the physician's sympathy and help signify.

Snake-bite and Alcohol.

At the beginning of the present year in the newspaper interviews which were published to show how wonderful was the new discovery in the transmission of nerve impulses announced by Professor Matthews at the meeting of the American Physiological Society, there was given as a proof that his theory was correct the fact that it explained why alcohol saved the lives of those who had been bitten by venomous snakes. We are just getting into the snake period of the year and, as a consequence, various repetitions of this wonderful scientific fact and the new significance given it by the Chicago scientist have been getting into the daily newspapers.

Even the New York Times, usually so conservative in medical matters, has had some remarks on the subject, more than half in jest, of course, but that will surely be taken more than half in earnest by many of their readers. The editor says: "The fact remains that the popular antidote for snake-poison (whisky) has never failed when taken in time. It is no longer to be regarded as an accidental and unscientific cure. Professor Loeb has discovered that death from snake-bite is due to the rapid liquefaction of the nerve substance and that it is the effect of whisky to retard or prevent this process. It is in favor of this popular remedy that usually it is more easy to get than any other. In no part of the country is it the habit of men to carry about in their pockets flasks of permanganate of potash, for example. Besides, there are far-sighted men who keep their nerve substance solidified to a degree which must render them virtually immune should they happen to meet any snakes."

In our report of a meeting of the New York Academy of Medicine in which a number of experts took part in a discussion of remedies for snake-bites, we said that there was not a single case on record of a person bitten by a venomous reptile having been cured by the administration of alcohol in any form. A number of individuals have been bitten by poisonous snakes while under the influence of liquor even to drunkenness, but they have nevertheless perished. In a large number of reported cases in which considerable amounts of alcohol were given after snake-bite, life was not saved. Stimulation is a very necessary part of the treatment of snake-bite. Such stimulants as strychnine, atropine and digitalis are, however, much better than alcohol. It is probable that the administration of whisky to excess lowers the resistive vitality and has been the real cause of the deaths in a certain number of cases in which the patient's life would have been saved had his normal resistive power not been thus abused.

Prudery in Extremis.

The London Lancet published not long ago an illustration of English medical prudery that probably caps the climax for anything in this line that has ever been reported. The Lancet says: "We have all heard of the American ladies whose sense of modesty was such that they clothed the legs of their tables and chairs in nether garments. The following occurrence at one of the great London hospitals is illustrative of feeling every whit as nice. A cold-storage chamber was being constructed in connection with the postmortem room and the secretary of the hospital, on going to see how the work was getting on, found that the chamber was being fitted with double doors and those of small size instead of one large door. He made inquiries as to the reason for this deviation from the original plan, when the chief carpenter replied, "Oh, sir, we are putting in double doors and a wooden partition in order to keep the sexes apart."

Those familiar with hospital affairs in America might be tempted to ask if the board of lady visitors had not had something to do with the change so calculated to preserve the proprieties even beyond the gates of death.

Medical Contributors to Science.

In the June number of Scribner's Magazine, Harvey Maitland Watts, in an interesting article on "The Gulf Stream Myth and the Anticyclone," calls attention to the fact that the first true explanation of the winds and currents of the ocean was published in 1856 in the Nashville Journal of Medicine. Its author was William Ferrel, a Pennsylvania schoolmaster, who was at the time of its publication very much interested in medical subjects and supposed to be studying with a physician. This article is spoken of by good authorities on the subject as an epoch-making essay in meteorology. When, a little later, Professor Cleveland Abbe, of the United States Weather Bureau, summed up the modern scientific views as to the modification of climates by air-currents, he grounded his conclusion on what he calls Ferrel's splendid work.

This is only one of the many examples in scientific history of the interest of medical men in scientific subjects leading to far-reaching discoveries. This particular contribution to science is only now being credited with its proper value when the scientific world has come to the realization that the supposed climatic effects of the Gulf Stream are really a myth and founded on an abandoned hypothesis. It is not the currents of water in the Atlantic that modify Great Britain's climate, but the air-currents formerly a constant anticyclone above the ocean.

Blindness During Eye Movements.

We called attention some time ago to the contention of Professor Raymond Dodge, of the Department of Psychology of Wesleyan University, that during movements of the eyes we are unable to see anything. The proof of this he considers to be ample from the fact that we are never able to see our own eyes move in a mirror. We may be able to see one eye move by means of the other, but a single eye can never perceive its own movements no matter how carefully it may watch for them. He says:

"The general law that we are practically blind during a fraction of second at each eye movement has a number of unsuspected consequences. Many a sleight-of-hand trick, apparently depending only on rapidity of movement, really depends for its success on these moments of blindness when the spectators' eyes attempt to follow a rapid movement of the operator's hand, or unconsciously move in obedience to some other suggestion. More serious are such moments of blindness to the boxer or the fencer. Empirical expediency long ago developed the maxim that both the boxer and fencer should fixate the eyes of the opponent. This is not merely to avoid giving cues of intended movements, but also to avoid the disastrously numerous moments of blindness which would result if one would attempt to follow the motions of an opponent's hand.

The Professor gives some directions with regard to the viewing of scenery which are of especial value at this season of the year. To watch the scenery from a railway car with a minimum of fatigue pains must be taken to look through a window well ahead. It is even better, if one can sufficiently control the eye muscles to fixate some point on the window glass one or two seats ahead. The eyes will in this way, be kept motionless, while the general features of the landscape may be seen quite plainly.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE. SECTION ON PEDIATRICS.

Stated Meeting, Held May 8, 1902.

Rowland G. Freeman, M.D., Chairman.

Acute Leucemia in an Infant.—Dr. Sarah Welt Kakels reported a fatal case of this rather rare disease in a child of eighteen months and presented specimens of the blood, showing the characteristic appearances of leucemia. There are at the present time over seventy cases of leucemia reported in literature. Twenty-four of these cases occurred in children under ten years of age, not counting the two cases mentioned by Hübner as seen in his clinic, at a recent meeting of a German medical society. Dr. Kakels' patient was a dispensary case, whose family history presented no evidence of syphilis or of tuberculosis. The parents were Poles, healthy themselves and of healthy lineage. The next older child was four years of age and healthy. This was the third child and the first one had also been healthy. The child presented the rather simple symptoms of some diarrhea, with red spots on the skin and face, followed by some extravasation of blood from the bowels. At first the appetite was not disturbed. After a time, however, the little patient took on an intense pallor and a very waxy look. The expression became somewhat drawn and haggard. The appetite began to fail and when the child came to the clinic there were a number of purpuric spots over the body, which did not disappear on pressure. Some fresh subcutaneous hemorrhages were to be seen over the sacrum. The child kept the mouth open most of the time; the gums were spongy and showed a tendency to bleed and the breath was very fetid. The cervical glands enlarged early and tumors the size of a hazelnut could be felt beneath the jaw. Distinct, but not very great enlargement of the posterior cervical gland occurred. The thymic dulness was markedly increased, the spleen was enlarged, although not very greatly, and the liver was also slightly enlarged.

Blood Condition.—The blood-count showed that there were 2,200,000 red blood-cells to the cubic millimeter, while there were 682,000 white blood-cells. In the fields that were gone over in order to make this count four normoblasts occurred and six megaloblasts. This proportion of one white cell to three red cells is an extremely large number and indicates an intense disturbance of the blood-making apparatus. Pincus reports Pinele's case, in which there were 550,000 white cells to the cubic millimeter as the largest authenticated white count in the literature. In this case, contrary to the usual finding in such matters, there were more small lymphocytes than large ones. The cause of death in the case was asthenia and a terminal brain hemorrhage. The child had been running down so much and all medication had proved so hopeless that the end was inevitable and had been foreseen. Unfortunately it had been impossible to obtain an autopsy.

Duration of Disease and Etiology.—In this case the history seemed to show that the affection had not lasted more than four or five weeks. Professor Ebstein said that the longest duration of acute leucemia was nine weeks. At least one case has been reported, however, in which the patient did not die for sixteen weeks after the blood showed the symptoms of decided pathological leucocytosis. On the other hand, some cases run a much shorter course. One has been reported in which death occurred after four days and a half. These rapidly fatal cases are sometimes spoken of as *leucemia acutissima.* The cause of the disease remains a mystery. Friedreich, who described the original cases, thought the disease was due to an infection. Many observers have thought the same thing. In Dr. Kakels' case the enlargement of the gland around the mouth seemed to show that this had been the point of entry for the infectious material. Many organisms have been described as causative of leucemia. It is probable, however, that the ordinary bacteria mentioned by various writers were only secondary infectious agents. Mannaberg described a protozoan-like body that occurred in white cells. It is possible, however, that these are only due to degeneration in the leucocytes which are attributable to the fact that the blood-making apparatus is in a pathological condition. Loewit demonstrated certain appearances that occur in the nucleated red blood-cells in these cases, which he has considered to indicate the presence of a parasite within them. By other authorities, however, these appearances are considered to be artefacts. The disease has sometimes been thought to be contagious. The therapeutics of the disease is so far absolutely *nil.*

Possible Thymus Origin.—In discussing Dr. Kakel's case Dr. Charles Herman said that a recent French observer had reported an enormous thymus gland as occurring in a case of acute leucemia. At the present moment there is no satisfactory etiology for this fatal affection, therefore the possible etiological connection between the thymus and the disease must not be overlooked, but on the contrary deserves special investigation. In Dr. Kakels' case the occurrence of increased thymic dulness shows that if an autopsy had been allowed it is probable that very great enlargement of the thymus would have been found. The frequent occurrence of acute leucemia during the period of childhood, when the thymus is active may enable some fortunate observer to detect the etiological connection between the glands and the disease.

The remaining scientific business of the evening consisted of a

SYMPOSIUM ON THE SUMMER DIARRHEAS OF INFANCY.

The first paper on the etiology and prophylaxis of the summer diarrheas of children was read by Dr. Henry Heiman.

Nomenclature and Bacteriology.—Dr. Heiman said that the name summer diarrhea is not a desirable term. There is no seasonal basis for the gastro-enteritis which occurs so frequently in the summer time and it is only the fact that the heat causes a predisposition to lowered vital resistance and active bacterial development that causes the affection to be more common in the summer. It might as well be said that there are winter diarrheas due to cold. There is no doubt now in the minds of practitioners that the gastro-enteritis of infancy is associated almost invariably with certain bacteria. Micro-organisms that are present in the gastro-intestinal tract without doing any harm may become specifically virulent under special circumstances. Of these the bacillus coli communis and certain of the pus micro-organisms are the most prominent. Hayem in Paris described special bacilli that occur constantly in green stools. Baginsky of Berlin described certain chromogenic and non-chromogenic bacteria that produce acid diarrhea. There seems to be good reason to think that bacteria play a rôle in the physiological process of digestion. Knowledge on this point, however, is not very definite. There seems to be a series of micro-organisms constantly present in the intestinal tract, some of which have antagonistic action to others, so that a sort of bacterial equlibrium is established.

Varieties of Gastro-enteritis.—Dr. Heiman considers that the gastro-enteritis affections of children may be divided into infective and non-infective varieties. The non-infective variety is due to the presence of irritating substances other than bacteria in the intestinal tract. The infective variety may be either inflammatory or non-inflammatory. The non-inflammatory gastro--enteritis is a simple condition of congestion without serious anatomical lesions and all that is needed for its treatment is to clean out the intestines and they at once resume their function. With regard to the inflammatory gastro-enteritis Dr. Heiman has endeavored by the injection of 2- and 5-per-cent. solutions of formalin to harden the tissues sufficiently for study post-mortem. This procedure does undoubtedly preserve epithelial cells better than do other methods.

Temperature and Gastro-enteritis.—When the outdoor temperature begins to run above 75° F. with 80 per cent. of humidity epidemics of gastro-enteritis develop. There is no doubt, however, that in recent years these affections have been much less common than heretofore. At Mt. Sinai Hospital much less summer diarrhea is seen, because mothers, even in the tenement-house districts, are better instructed with regard to the dangers of the development of the disease in the summer. The causes of the affection are in breast-fed babies, uncleanliness of the mother and of the child's mouth and overfeeding. Another prominent cause is the prolonged lactation by which the mothers hope to carry their children over the dangers of the second summer. Neither the quantity nor the quality of the mother's milk under these circumstances is such as to keep the child's restive vitality up to the normal. In bottle-fed babies the causes of gastro-enteritis are mainly such as are connected with the cleanliness of the milk and of the bottle. As children grow older they are given a mixed diet which is extremely unsuitable in many cases and proves irritating.

Prophylaxis.—The main principles of prophylaxis are suitable feeding and guarding against overfeeding. In the summer children are prone to be very thirsty and when they cry they should be given cool, boiled water. With regard to the severity of the disease, its early recognition is the surest way to prevent fatal development. The first symptoms of a diarrheic condition must be the signal for active treatment. Mothers are prone to think that a slight diarrhea is a necessary accompaniment of dentition. This causes them to neglect the first symptoms of gastro-enteritis until the condition has become serious. General prophylaxis includes especially the thorough inspection of the milk-supply. This must be accomplished through boards of health. Another important aid in prophylaxis is the suitable construction of tenement-houses. Air and proper opportunities for bathing children and absence of over-crowding, so that the little ones are able to sleep well at night, are main factors in keeping up the child's vitality during the trying time of the heated period. There seems no doubt that gastro-enteritis, like other infectious diseases, will soon be under proper control and that its mortality will be reduced still more than at the present time, although there has been a remarkable reduction in mortality during the last ten years.

Nephritis and Gastro-enteritis.—Dr. John Lovett Morse of Boston, Mass., read a paper on the renal complications of severe summer diarrhea which appears in this week's issue of the MEDICAL NEWS.

Treatment of Summer Diarrhea.—Dr. Charles Gilmore Kerley read a paper discussing the methods of treatment that have been found most successful in dispensary and hospital service, as well as in private practice, for the treatment of the severe gastro-enteritis of the summer. Most diarrheas occur under two years of age. At this time the child's diet consists mainly of milk. As soon as the diarrhea begins, all milk must be stopped. This is true no matter what its source—mother's milk, guaranteed cow's milk, dairy milk or grocery milk—all alike must be stopped completely and at once. It does no good to Pasteurize or to boil or to modify the milk in any manner. It must simply be stopped. If the child be nursing, there must be no food for twenty-four hours. Then nursing may be tried, but if it show any tendency to cause the diarrhea to persist even breast-milk must be stopped and substitutes employed. If the child be on a mixed diet consisting mainly of milk, all the cow's milk must be stopped at once. It may be necessary to stop for days even for weeks. Dr. Kerley has seen a case in which only after five months could the use of milk be resumed. The substitute foods should consist mainly of carbohydrates. A tablespoonful of barley flour or of rice, cooked in a pint of water, should be given in quantities about equal to the amount of milk taken before; this for a child under one year of age. For older children, more of the carbohydrates may be employed and the feeding mixture may be dextrinized. Such food is not pleasant, because of the sameness of its taste. To give a variety of savor, chicken-, mutton-, or beef-broth in small quantities may be added. Beef-juice may also be added at times, but sparingly and only with the idea of making the food tasty, not with the idea of adding to its nutritional qualities. The free use of brandy and whisky, which is sometimes advised because children are in a weakened condition, is not advisable. They rather add to the lack of resistive vitality and do not increase the store of vital force, as is sometimes taught. The use of egg albumin dissolved in water, used to be a favorite recommendation. This compound is not, however, as suitable in cases of gastro-enteric disturbance as are carbohydrates. Bacteria can be cultivated on egg-water, while the fermentation set up by the carbonhydrates is rather unfavorable to the growth, especially of the pathogenic bacteria. The use of certain of the proteid sparers has been suggested. The three classes of foods that come under this head are gelatin, fats, and carbohydrates. The fats are distasteful and hence cannot be used for any length of time. The end products of gelatin when digested are very similar to those of milk and hence they would probably prove as unsuitable for the disturbed gastro-intestinal tract. Carbohydrates are therefore the indicated food products. The by-products of carbohydrate digestion are mainly excreted through the lungs. This saves the intestines considerable irritation.

Method of Feeding.—The carbohydrates solution should be given at the usual feeding-time and in about the same quantity as had before been given of milk. Needless to say, they must be thoroughly cooked, very much longer than is usually supposed to be necessary. The children must be very sedulously cared for in other ways. The little patients should occupy a large room that is kept thoroughly ventilated. Everything should be done that will add to its comfort. If there be any fever the infant should be sponged so as to reduce its temperature and give it the opportunities for rest that invariably come with temperature reduction.

Drug Treatment.—Calomel and castor oil are the only two drugs which seem to Dr. Kerley to be of any use. If the use of milk be continued in the dietary no drugs are any good. In many cases bismuth subnitrate seems to be a useful astringent and mechanically efficient drug for the prevention of irritation. It must be given not in any stated dose, but according to the needs of the individual case. The amount ingested must be sufficient to produce black stools. These are due to sulphide of bismuth. Unless this substance occur in the stools, good results cannot be looked for. Occasionally Dr. Kerley administers sulphur in the shape of washed sulphur in one-grain doses every two hours, in order to get the sulphide of bismuth reaction which seems to be of decided benefit. Unless the number of stools in the day be very large, no opium should be employed. It will invariably be noticed that when opium is employed the locking up of the secretions causes the absorption of toxins from the intestinal tract and makes the little patient's constitutional condition worse. When opium has to be employed, Dover's powder seems the most suitable preparation; from one-quarter to one-half a grain every two to three hours for a child a year old is sufficient. If necessary more opium should be employed or the doses should be given more frequently, so as to make the child less uncomfortable.

Irrigations.—If considerable mucus and blood appear in the stools, irrigations may be employed with decided advantage. This form of treatment is, however, only to be thought of when the stools are not very frequent. When the stools are frequent it is only an added bother and does no good. The tube should be inserted at least nine inches into the anus, in order that one may be sure that it will reach above the sigmoid and reach every part of the mucous membrane of the large intestine. The injection fluid should be lukewarm as a rule. If the child suffer from considerable fever, the temperature of the injection fluid may be much less than this so as to aid in the reduction of the temperature. If the affection be of the algid type and accompanied by considerable prostration, injections may be given at a temperature of 110° F., so as to have them act as a stimulant.

Prophylaxis.—As soon as any gastro-intestinal derangement is noted mothers should be on their guard to stop milk-feeding and see that no diarrheic condition is allowed to persist beyond a few hours. If the stools be offensive, mothers should stop milk-feeding and give a desertspoonful of castor oil. If the patient's condition does not improve rapidly, a physician should be consulted.

Temperature and Gastro-enteritis.—Dr. Stowell said that he has seen much less serious diarrheic conditions in recent years. The so-called cholera morbus is not limited to the summer. Of three deaths from this disease one occurred in August, one in October and one in February. For the diarrheic conditions the materia medica gives very little assistance and the limitation of the food is the most important remedial measure. Dr. Stowell has found chalk mixture and bismuth quite as good as the elaborate antiseptic preparations that have been so extensively advertised. There is not so much cholera infantum in tenement houses in recent years, because mothers are being taught more how to guard against the condition.

Chronic Overdistention and Gastro-enteritis.—Dr. B. Van D. Hedges said that chronic overdistention of the stomach is undoubtedly responsible for many diarrheic disturbances in children. Children's stomachs, capable of holding three to four ounces, have five to six ounces put into them. The diet of small children, even in families of the better class, may be very indiscriminate. Dr. Hedges saw recently a very bad case of diarrhea in a child eighteen months old. After careful questioning the mother confessed that the child had been given some lobster *à la Newburgh* the evening before. Dr. Hedges considers that opium should be used very carefully. No decrease in the number of stools should be allowed to occur, unless their character be better. The napkins should be put away for inspection so that the physician may judge for himself of the character of the stools. Subcarbonate of bismuth in large doses is of excellent service. It at least acts mechanically, rolling up the mucus and carrying it out of the intestines, thus removing a source of irritation.

Renal Symptoms.—Dr. Walter Lester Carr said that when renal complications exist there is a notable lack of symptoms from them. He has seen in certain of these cases a dyspnea out of all proportion to any cause in the lungs. Rapid pulse and vomiting uncontrollable by all ordinary means are also significant. Dr. Carr has never seen signs of edema though he has looked for it very carefully. There is apt to be very little albumin present, so that the condition is often overlooked.

Fulminant Diarrhea.—Dr. Wells of Englewood, New Jersey, said that in an epidemic of fulminant diarrhea seen in East Hampton, Long Island, streptococci were found in the stools and also in the milk. Several of the herds which supplied the milk to the town were found to have streptococcic infections of the udder. Veterinarians declared these cases to be unmistakably cowpox. When these herds were quarantined no further cases occurred, although it was in the hot weather.

Abuse of Antiseptics.—Dr. James J. Walsh said that a word of protest seems needed with regard to the use of salol and other such antiseptics. Undoubtedly the gastro-enteritis of the summer is due to bacteria. No antiseptic will hinder the multiplication of these bacteria, however, without injuring the patient. Salol has been used extensively, but kidney congestion is the rule in these cases and salol undoubtedly introduces an additional irritant into the kidney circulation. A number of drug-manufacturing firms are urging the physician to employ antiseptics, but they will surely prove harmful rather than beneficial. Gastro-intestinal antisepsis in children is eminently desirable, but it is a myth in practice.

Dietetic and Drug Treatment.—In closing the discussion Dr. Morse said the most important remedial measure is the emptying of the bowels so as to lessen the multiplication of the bacteria. The initial measure then must be starvation. Some other food than milk must be employed. Milk need not be withdrawn, however, for as long a time as Dr. Kerley insists. Brandy, notwithstanding many recommendations, is contraindicated. Bismuth is the only drug that is of service and should be given in large doses. The only indication for opium is the increase of peristalsis that sometimes occurs in simple diarrhea without pathological lesions. Irrigation has undoubtedly been overdone. Large injections are indicated only when there is inflammation of the colon. The use of salt solution subcutaneously thins the blood, lessens the irritation of the kidneys, and helps elimination.

Dr. Kerley in closing the discussion said that the stools must always form the indication for treatment and the physician should see them. Salol does no good and upsets the stomach.

BOOK REVIEWS.

The International Medical Annual. A Year-Book of Treatment and Practitioner's Index. Twentieth Year. E. B. Treat & Co., New York and Chicago.

In its twentieth year the "International Medical Annual" is well up to its reputation and we may even venture to say that there is even an improvement on recent issues. Certain subjects have been excellently handled. The subject of arsenic-poisoning, especially with reference to the cases that occurred a year or two ago in England from the consumption of beer into which arsenic had found its way because of its presence as an adulterant in one of the materials out of which the beer was made, is treated with the fulness due to so important a practical subject.

The departments of brain and intestinal surgery are very interestingly discussed, though one can not help having the feeling that they are incomplete and that we get at only the details of special interest to the reviewer. The illustrations are especially well chosen and are very well reproduced. The alphabetical arrangement adds to the handiness of the book, though it gives an air of fragmentariness to the material that detracts from the fulness of the treatment accorded many subjects.

A Hand-Book of Appendicitis. By A. J. Ochsner, M.D., Professor of Clinical Surgery, College of Physicians and Surgeons, Medical Department of the University of Illinois; Surgeon to the Augustana Hospital, etc., Chicago, C. P. Engelhard & Company.

There are hand-books for revenue only, too hastily written, too attractively produced as to typography and binding, and immodest in their claims of covering the entire field of some branch of medical science. They are veritable misfortunes to the student, although they may be money-makers for the publishers. This handbook is of another class—that which aims to deal with one important protean disease, thereby making it really a monograph on its subject, namely, appendicitis. It is undoubtedly true that a library made up of similar, first-class monographs by only able men is of far greater value than one made up of so-called standard textbooks. Dr. Ochsner's position in the field of American surgery needs no comment and is a warrant of the carefulness in preparation and the conservatively scientific precision in the deductions presented in this hand-book. It deserves to stand on the library shelf of every physician, beside such similar modest, but invaluable monographs as Keen's "Surgical Complications of Typhoid Fever" and Hare's "Medical Complications of Typhoid Fever." Dr. Ochsner's chapter on Non-operative Treatment of Appendicitis ought to be memorized, or "pasted in the hat" of every general practitioner of medicine, especially those in small outlying communities which possess no surgeons of the modern school.

Les Filatures de Lin. Dr. D. Glibert, Inspecteur-médecin du travail a l'administration céntrale de Bruxelles. Société Belge de Librairie, Bruxelles.

This is a professional hygienic study of the best type, a kind of work not uncommonly carried on in Europe, but unfortunately almost entirely neglected in this country, where there is all the more need of it.

This investigation concerning the influences on the health of workers in the factories of linen and cotton manufacture was instituted in 1895 by a royal decree and was prosecuted for six years. Studies are here recorded which might have any possible connection with the questions involved.

The work contains some 460 pages and a thorough review would take us beyond the limits usually accorded to reviews. It should be said, however, that every hygienist should read this well-written and beautifully-illustrated book and that presidents of boards of health should have it carefully digested and its sanitary lessons made to bear fruit.

Laboratory Work with Mosquitoes. By William N. Berkeley, A.B., M.D., New York. Pediatrics Laboratory, New York.

The activities of the past half-dozen years anent the growth and development of the mosquito have resulted in much practical value, not the least of which has been the issuance of some half-dozen manuals bearing on the problems involved. One of the smallest of these, and yet at the same time a very excellent treatise, is this by Dr. Berkeley.

He discusses the Development and Mode of Life of the *Culicidæ;* Their Collection, Feeding and Breeding; Practical Outlines of Anatomy; Key to U. S. Genera and Species; Dissection, Sectioning and Staining; Malarial Parasites; Morphology of Mosquito-Phase; Mosquitoes and Fiarial Disease, and Mosquitoes and Malarial Fevers, in several short and terse chapters.

The work is most excellent and its chapters on the yellow fever and its mosquito, *Stegomeia,* is new and the first exposition of the subject.

On Disorders of Assimilation, Digestion, Etc. By Sir Lauder Brunton, M.D., D.Sc., LL.D., etc. The MacMillan Company, New York.

There are few writers of modern times who can so engage the attention of the reader and at the same time illuminate the subject discussed as Sir Lauder Brunton. The present volume is an excellent illustration of his best style.

The work under discussion is a collection of scattered papers and addresses partly woven into a coherent treatise. Some of the papers were published as far back as 1873, while others are of very recent origin, yet all, old as well as new, show the same breadth of sound generalization and wealth of clinical observation. The chapters here presented are so extremely diverse that nothing short of the table of contents can show their many-sidedness. Shining throughout there is a strong practical note and the practitioner is the richer for this collected series of papers.

Merck's 1901 Manual of the Materia Medica. Merck & Company, New York and Chicago.

For a ready pocket-book for the practising physician and surgeon this little manual is worthy of recommendation. It contains names and chief synonyms of drugs and chemicals usual in modern medical practice; their physical form and appearance, solubilities, percentage strengths and physiological effects, therapeutic uses, modes of administration and application, regular and maximum dosage, incompatibles, antidotes, precautionary requirements, etc. It also has a comprehensive collection of prescriptions, embracing also the newer remedies of established merit; a classification of medicaments; and miscellany, comprising poisoning and its treatment, metric system and tables.

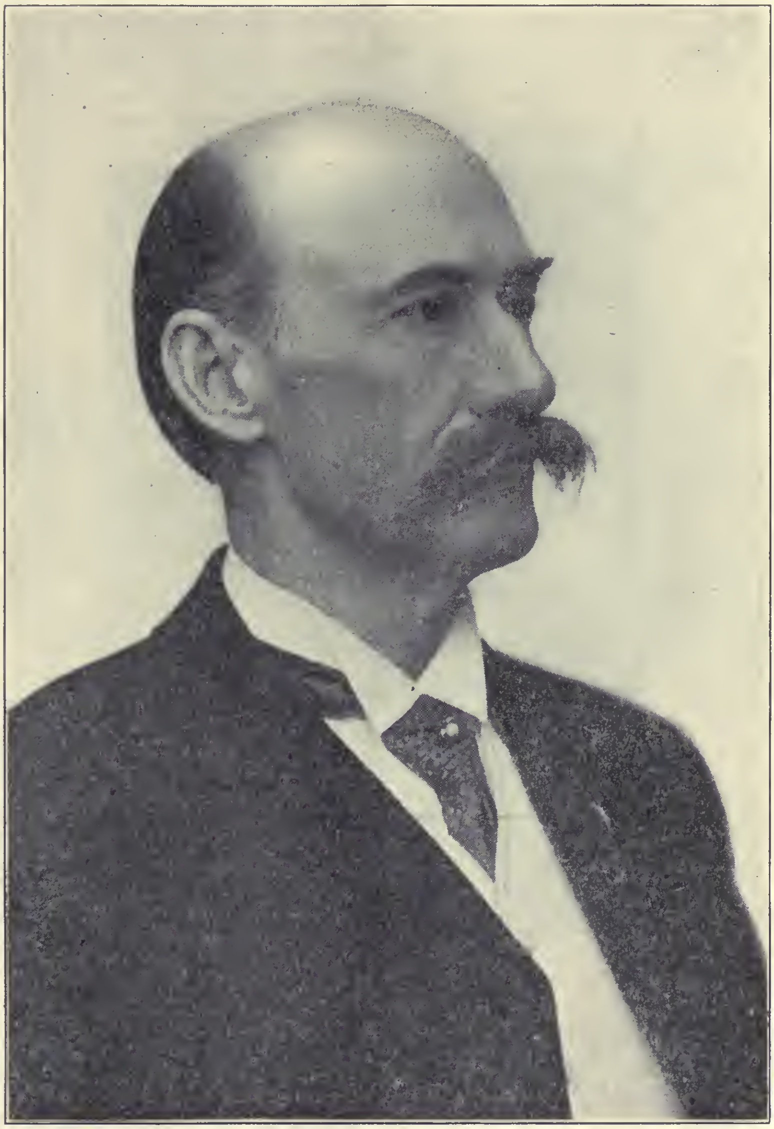
SPECIAL ARTICLES.

ITEMS OF PERSONAL INTEREST.

From the standpoint of the scientific interests, the success of the section meetings of the American Medical Association is largely the creation of their chairmen. The varied and highly interesting program which has been prepared for the annual meeting at Saratoga reflects the energy of these men and their coadjutors, the secretaries of the sections. It has been deemed of interest in this connection to better acquaint our readers with these men and the following short biographical sketches are here offered in the hope that they may prove of interest as a moment's record of this memorable occasion.

The Association is at the present time divided for purposes of convenience into twelve different sections: Medicine, Obstetrics and Gynecology; Surgery and Anatomy; State Medicine; Ophthalmology; Pediatrics; Stomatology; Nervous and Mental Diseases; Dermatology, Laryngology and Otology; Materia Medica; Pharmacy and Therapeutics, and Physiology and Pathology.

A word perhaps in advance might well be said of the worthy president of the American Medical Association.



John A. Wyeth, M.D., LL.D.

John Allan Wyeth, surgeon, was born in Marshall County, Alabama, May 26, 1843; son of Louis Wyeth, lawyer and judge of one of the judicial districts of Alabama, who died in 1889, at the age of seventy-seven. The grandfather of Louis Wyeth was Ebenezer Wyeth, a farmer and private in Captain Samuel Thatcher's company of Massachusetts militia, which attacked the British and drove them into Boston on the retreat from Lexington on April 19, 1775. Thatcher's company was in the regiment of Colonel Gardner, who was killed at Bunker Hill. In this company of eighty men, of whom a list is given in Paige's "History of Cambridge," "in commemoration of their patriotism in marching to the alarm," there were five Wyeths. The founder of this branch of the family in America was Nicholas Wyeth (or Wythe, as the name sometimes appeared in the middle of the seventeenth century), who settled and became proprietor of lands in what is now Cambridge, Mass., in 1645. Dr. Wyeth's mother was Euphemia Allan, daughter of John Allan, a Presbyterian clergyman who settled in Tennessee, having emigrated from England. He afterward removed to Huntsville, Ala.

The son was educated in the common school at Guntersville, Ala., and was one year at the Military Academy at Lagrange, Ala. He served as a private soldier in the Confederate army. He commenced the study of medicine in 1867, was graduated at the University of Louisville in 1869, took the degree of *ad eundem* at Bellevue Medical College, 1873; was appointed assistant demonstrator of anatomy in this college, 1873, and prosector to the chair of anatomy in 1874; published an article on "Dextral Preference in Man" in 1875; was awarded the Alumni Association prize in 1876, for "the best essay on any subject connected with surgery or surgical pathology," his subject being "Amputation at the Ankle Joint." He won the first prize of the American Medical Association in 1878 for an essay on "The Surgical Anatomy and Surgery of the Common, External and Internal Carotid Arteries," and second prize of the same Association in 1878 for an essay on "The Surgical Anatomy and Surgery of the Innominate and Subclavian Arteries." He was appointed surgeon to Mt. Sinai Hospital in 1880; founded the New York Polyclinic, a school of clinical medicine and surgery for practitioners, in 1882; became professor of surgery in that institution, and in 1893 president of the faculty. He is the author of a "Text Book on Surgery" (1886); "Bloodless Amputation at the Hip Joint" (1890); "Osteoplastic Operation for Correction of Deformities of the Nose and Palate" (1892); an historical sketch entitled "The Struggle for Oregon," in Harper's Magazine (1892), and a considerable number of contributions to various scientific periodicals. He was twice president of the New York Pathological Society, and in 1893 first vice-president of the American Medical Association. In 1896 he published the "Life of Lieutenant-General Nathan B. Forrest" (Harper & Bros.) and in 1900 was made president of the New York State Medical Association, and in 1901 president of the American Medical Association. The same year (1901) he received the degree of Doctor of Laws from the University of his native state, Alabama. In 1886 he was married to Florence Nightingale Sims, daughter of the eminent surgeon, James Marion Sims.

George H. Simmons, M.D.

No more energetic worker for the American Medical Association could be found than its present secretary, Dr. G. H. Simmons. By the contagious influence of his indomitable perseverance and never-ceasing endeavors, the Association has risen to be a power and the medical profession of the country has been rapidly approaching a point of solidarity perhaps undreamed of a decade ago.

Dr. George H. Simmons was born in England in 1853, and was brought to the United States when a boy. He received his education at Tabor College and at the University of Nebraska. For three years he taught school in Lincoln, Neb. He spent two years in London and Vienna and obtained the degree of L.M. at the Rotunda Hospital, Dublin. He began the practice of medicine in Lincoln, Neb., in 1884, and remained there until he removed to Chicago. For many years he was secretary of the Nebraska State Medical Society. He was elected editor of the Journal of the American Medical Association in February, 1899, and in June, 1899, he was elected secretary of the American Medical Association.

Did the space at our command warrant it, the many excellent coworkers on the various committees might be singled out for individual mention, but it has been found inexpedient to fill out this incomplete sketch. One other laborer in the field in the Empire State should not be omitted, however, even in this short summary. Dr. Frederick Holme Wiggin has been the mainspring of action in this State and much praise should be accorded him for his energy and unflinching devotion to the cause.

Dr. Frederick Holme Wiggin was born in England, at Kingston-on-Thames, where his parents temporarily resided, but in 1859, when six years old, he was brought to the United States. He was educated in New Haven, in Andover and at the Troy Polytechnic, beginning to study medicine in 1874 under Dr. James R. Wood of New York, and taking lectures at the Bellevue Hospital Medical College, from which he was graduated in 1877, and in which he served in different capacities until 1878. He practised in New York for one year, then went to Litchfield, Conn., until 1890, when he returned to New York for permanent residence.

FREDERICK HOLME WIGGIN, M.D.

Dr. Wiggin's main work is general surgery and surgical gynecology. He was the first to report a case of contusion and rupture of the ileum with peritonitis and with no external wound, treated by celiotomy and primary enterectomy, followed by circular enterorrhaphy, which was published in the New York Medical Journal, January, 1894.

He has been president of the Litchfield County Medical Society; vice-president of the Connecticut Medical Society; is a member of several New York societies, of the Alumni of Bellevue, of the American Medical Association, honorary member of the Congress of German Surgeons of Berlin, and belongs to the Union League Club and to Delta Psi.

Dr. Wiggin's chief papers have been on "Intestinal Obstruction, Diagnosis and Treatment," Medical Record, July 23, 1892; "Celiotomy for Bilateral Pyosalpinx," New York Medical Journal, April 7, 1894, and "Perforation in Enteric Fever: Its Surgical Treatment," read at the one hundred and third meeting of the Connecticut Medical Society in 1895.

Passing to the chairmen of the different sections, that on the Practice of Medicine first claims attention. Dr. Frank Jones of Memphis, Tenn., is the chairman and Dr. Robert Preble of Chicago the secretary.

Dr. Jones describes himself as a plain, every-day practitioner with but few attainments. He was graduated from the Louisville Medical College of Kentucky in 1890 and is thus a young man in the profession. Dr. Jones has done very excellent work in the study of diseases of the chest, which branch of work he has made a specialty. He has written most meritoriously on "Malarial Hematuria," "The Present Status of Pneumonia," "Some Points in Cardiac Diagnosis and Treatment," "A Plea for a More Rational Treatment of Cardiac Lesions," "Clinical Observations in Malaria as Observed in the Mississippi Delta," "Cardiac Lesions in the Negro," "Pleurisy with Effusion," etc. Society work has claimed considerable attention at Dr. Jones's hands and he has found time with a busy practice to take active part as a member in the Mississippi State Medical Society, in which he is an ex-secretary of the State Executive Committee; the Tennessee Medical Association, the West Tennessee Medical and Surgical Association, and others, in a number of which he has held office. Dr. Jones moreover is chief of clinic, demonstrator of physical diagnosis and lecturer on clinical medicine in the Memphis Hospital Medical College.

FRANK JONES, M.D.

In the Section on Obstetrics and Diseases of Women, Dr. J. H. Carstens of Detroit is chairman and Dr. C. L. Bonifield of Cincinnati, secretary.

Dr. J. Henry Carstens was born June 9, 1848, in Kiel, Germany, while his father was in prison as a revolutionist. His family soon came to America and went directly to Detroit, where Dr. Carstens attended the public schools and the German-American Seminary. He learned the drug business and remained in it until his nineteenth year, at which age he began to study medicine. He became the first matriculant of the Detroit Medical College, graduating in 1870, and was immediately put in charge of the College Dispensary and appointed lecturer on minor surgery. Dr. Carstens then changed from one subject to another, lecturing on almost every branch of medicine—dermatology, pathology, physical diagnosis and laryngology, diseases of the nervous system, diseases of children, differential diagnosis and clinical medicine.

In 1880 he was appointed professor of materia medica and therapeutics and lecturer on practice of medicine.

J. Henry Carstens, M.D.

His private practice developed, however, in the field of obstetrics and on the consolidation of the Detroit and the Michigan College of Medicine under the title of the Detroit College of Medicine he accepted the position of professor of obstetrics and clinical gynecology, which position he still holds. With the growth of modern gynecology into the field of abdominal and pelvic surgery, he devoted his entire time to the practice of abdominal surgery and gynecology.

Dr. Carstens has written on many branches of medicine, from cleft palate to reflex neurosis, from iodoform to scarlet fever, but during the last fifteen years he has written only along his special line of work—"Uterine Cancer;" "New Methods of Repair for Freshly Ruptured Perineum;" on "Pus Tubes;" on "The Technic of Vaginal Hysterectomy;" "Report of Six Cases of Cesarian Section;" on "The Technic of Abdominal Hysterectomy;" on "Nephropexy;" on "Gall-stones;" on "Methods of Closing Abdominal Incision."

Dr. Carstens has contributed more than a dozen papers on the various phases of the "Appendicitis Question;" on "Gall-stones;" a number of articles on "Ventrofixation," "Extra-uterine Pregnancy," "Surgery of the Stomach and Intestines," "Hepatopexy."

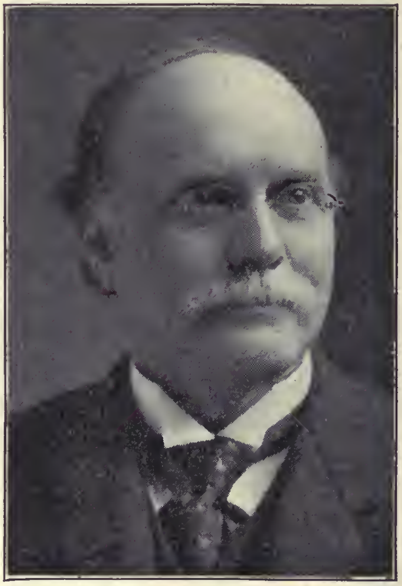
Dr. Carstens has been honored by his colleagues, having been placed in various positions of trust, such as president of the Detroit Medical Society, Detroit Gynecology Society, vice-president of the State Society. He was president of the American Association of Obstetrics and Gynecology. In 1895 he was appointed consulting obstetrician to the Women's Hospital and to the House of Providence, and gynecologist and chief-of-staff to Harper Hospital.

Dr. DeForest Willard of Philadelphia is the chairman of the Section on Surgery and Anatomy; Dr. James A. B. Bullit of Louisville is secretary.

Dr. Willard was born in Hartford, Conn., in the year 1846; he received the degree of A.M from Lafayette and in 1867, at the age of twenty-one, was graduated from the University of Pennsylvania, which institution conferred upon him the degree of Ph.D. in 1871. Dr. Willard has always practised in Philadelphia and has been president of a number of the local societies, notably the Philadelphia County Medical Society and the Philadelphia Academy of Surgery. Moreover, he has been president of the American Orthopedic Association and is the present president of the American Surgical Association.

As a teacher and practitioner of general and orthopedic surgery he has achieved much success, being clinical professor of orthopedic surgery in the University of Pennsylvania, surgeon to the Presbyterian Hospital, consulting surgeon to the Atlantic City Hospital, to the Pennsylvania State Hospital for the Insane, and to the New Jersey Training School. He is a Fellow of the College of Physicians, Philadelphia. Dr. Willard has contributed widely to the scientific and medical press, writing on experimental and clinical aspects of his specialty.

The Section on State Medicine, including Hygiene or Sanitary Science, has for its active leaders Dr. Arthur R. Reynolds of Chicago and Dr. H. M. Bracken of Minneapolis.



DeForest Willard, M.D.

Dr. Arthur R. Reynolds was graduated from Bellevue Hospital Medical College, New York, in the class of 1876. He practised at Orion, Mich., until 1882, when he moved to Chicago. He was appointed Commissioner of health in April, 1893, by Mayor Carter H. Harrison the elder. With the change of administration in June, 1895, he left the office but was reappointed in April, 1897, by Carter H. Harrison, the present Mayor. He was reappointed in 1899 and again in 1901.

Dr. Reynolds is a member of the Chicago Medical Society, the Illinois State Medical Society, Medical Association, American Public Health Association, and of the Sanitary Institute of Great Britain. He is not connected with any college at the present time.

His very active work as commissioner of health in the city of Chicago speaks for itself. He has proved himself an able sanitarian, a scientist of the widest versatility, and an executive officer of much ability.

Dr. Frank Allport of Chicago is chairman of the Section on Ophthalmology, of which Dr. C. A. Veasey of Philadelphia is secretary.

Dr. Allport was born in Watertown, N. Y., in 1855. He was educated at the Chicago University and Racine College, and studied medicine at Heidelberg University, Long Island College, Brooklyn, and Chicago Medical College, from which latter institution he was graduated in 1876. He practised as a general country practitioner at Sycamore, Ill., for five years, and then, after special preparatory study in London, Paris, and New York, moved to Minneapolis, Minn., and practised eye and ear surgery exclusively.

Dr. Allport became professor of clinical ophthalmology and otology in the University of Minnesota, which position he held for many years. At the present time he is eye and ear surgeon to many of the hospitals, dispensaries, and charitable institutions of the city and for the railroads which enter the city. Dr. Allport was president of the Minnesota State Medical Society in 1895 and 1896. In 1897 he moved to Chicago and at the present time is professor of ophthalmology in the Chicago Policlinic, professor of ophthalmology and otology in the Woman's Department of the Northwestern University, ophthalmologist and otologist to St. Luke's, St. Joseph's and Wesley Hospitals, consulting ophthalmologist and otologist to the Chicago Board of Education, ophthalmologist and otologist for numerous railroads and corporations. Dr. Allport has always manifested a strong scientific mathematical interest and has devised many instruments which are in popular use, particularly his mastoid retractors and middle-ear forceps, which are used the world over.

ARTHUR R. REYNOLDS, M.D.

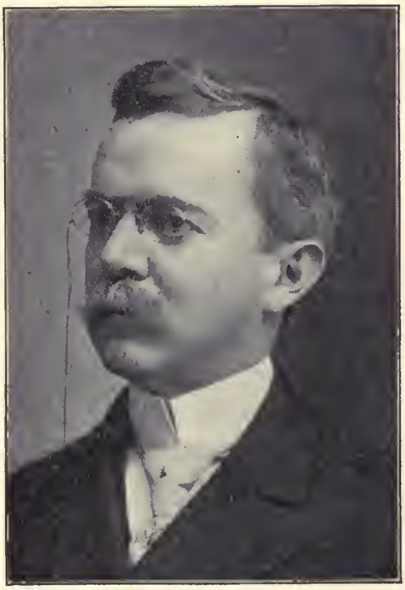
Dr. Allport believes that one of the most important services to his specialty has been his efforts made toward regulating the eyesight and hearing of railway employees, which subject is to be made one of paramount interest at this meeting of the American Medical Association, by a committee appointed by himself as chairman of the Ophthalmological Section. Dr. Edward Jackson, of Denver, is chairman of this committee. The originating and establishment of the idea of the systematic examination of the eyes and ears of school children by short practical annual examinations by school teachers is another topic close to Dr. Allport's interests. These tests are so elementary that any teacher who has intelligence enough to teach can make the tests. The ascertaining of ten elementary facts enables the teacher to decide whether a child has any serious eye or ear defect. If a defect be found, a card of warning is sent to the parent requesting, *but not ordering,* the parent to take the child either to the family physician or to some reputable ophthalmologist for examination. These tests are now being used quite generally throughout the United States and even in foreign countries, such as India, etc. The tests have become legally obligatory in the State of Connecticut, and have been adopted by many boards of education, city health departments, and State boards of health.

FRANK ALLPORT, M.D.

The Section on Dermatology is presided over by Dr. Henry W. Stelwagon of Philadelphia and Dr. R. R. Campbell of Chicago is secretary.

Dr. Stelwagon's career has been one of interest. He was graduated in medicine from the University of Pennsylvania in 1875 and served in the Philadelphia City Hospital in 1875-1876, after which he went abroad and studied in the Allgemeine Krankenhaus of Vienna for a period of two years. Returning to Philadelphia in 1878, he soon became chief officer of the Philadelphia Skin Dispensary, serving ten years. From 1885-1890 Dr. Stelwagon was instructor in dermatology at the University of Pennsylvania and was associated with Professor Duhring during these five years. Since 1888 he has been dermatologist to the Philadelphia City Hospital and to the Howard Hospital since 1885. In 1890 he was made clinical professor of dermatology in the Jefferson Medical College, which professorship he still holds and also that in the Woman's Medical College of Pennsylvania.

Dr. Stelwagon's literary work has been large in amount and excellent in quality. In addition to many minor articles he has also found time to publish or edit the following: "Compend on Diseases of the Skin," "Hand-atlas of Skin Diseases," "Treatise on Skin Disease," 1902; "Skin Diseases" (with Prof. Duhring) in Peffer's System of Medicine, 1885; "Skin Diseases," Wilson's Applied Therapeutics, 1896; contributions on dermatological subjects to Keating's Cyclopædia of Diseases of Children, 1889; to Morrow's System of Dermatology, 1896; to Hare's System of Therapeutics, 1900; to Buck's Reference Handbook of Medical Science, etc.



Henry W. Stelwagon, M.D.

Dr. Stelwagon is a member of many local as well as foreign societies, among the latter being the Italian Society of Dermatology and Syphilography.

Dr. G. Hudson Makuen of Philadelphia is chairman of the Section on Laryngology and Otology, Dr. J. F. Burnhill of Indianapolis being secretary.

Dr. Makuen was born on a farm in Goshen, Orange County, N. Y., in 1855, and was graduated from Yale in 1884 and from the Jefferson Medical College in 1889. He was resident surgeon in the Cooper Hospital in Camden, N. J., for one year thereafter, and served in the clinic of laryngology and demonstrated anatomy in the Jefferson College for several years, and now holds the following positions: professor of defects of speech at the Philadelphia Polyclinic (the only chair of the kind in the world) and laryngologist to St. Mary's Hospital and to the Douglas Memorial Hospital of Philadelphia.

Dr Makuen is a member of the American Laryngological Association, the American Laryngological, Rhinological and Otological Society, the American Academy of Medicine, of which he was president in 1900, the College of Physicians and Surgeons of Philadelphia and the American Association for the Advancement of Science.

In his own particular field of the treatment of speech defects, Dr. Makuen has been a pioneer and has contributed much to the understanding of many of the most important problems concerning voice production and voice development.

Dr. George F. Butler of Alma, Mich., and Dr. C. S. N. Hallberg of Chicago are respectively chairman and secretary of the Section on Materia Medica, Pharmacy and Therapeutics.

Dr. Butler was graduated from Rush Medical College in 1889 and began teaching medical pharmacy at that institution a week after his graduation. Later he taught materia medica and therapeutics and soon became professor of materia medica and therapeutics in the Woman's Medical College. In 1892 Dr. Butler resigned his position in Rush Medical College to become professor of materia medica, therapeutics and clinical medicine in the College of Physicians and Surgeons of Chicago, which chair he still holds.

In 1900 Dr. Butler left Chicago to become the medical society work and is a member of a number of the largest and best equipped sanitaria of this country.

Dr. Butler has always shown great activity in medical society work and is a member of a number of national, State and local societies.

A large number of important contributions to medical literature have been published by him, and he has also published one of the most popular text-books on materia medica, therapeutics and pharmacology which have appeared in a number of years. Its sixth edition is now in press.

Dr. Butler has been an able writer and a brilliant teacher, and moreover has strayed into the paths of general literature in his monograph on "Love and its Affinities (Religion and Lust);" a work of high moral purpose and spiritual discernment.

G. Hudson Makuen, M.D.

Dr. Frank B. Wynn of Indianapolis is chairman of the Section on Physiology and Pathology, of which Dr. Joseph McFarland of Philadelphia is secretary.

Dr. Wynn was born in the stirring times of the Civil War and if there be any subject upon which he is boastful it is that of his Hoosier nativity. Physical hardihood and industrious habits came to him as a country boy, in the region from which the scenes of Edward Eggleston's "Hoosier Schoolmaster" are drawn. His collegiate training was also at an Indiana University where he messed and engaged in class rushes, fraternity "spikes" and football with Senator Albert J.

Beveridge, James E. Watson and others who have since attained national distinction.

Dr. Wynn graduated in medicine at the Medical College of Ohio, afterward taking special work in the Carnegie Laboratory, New York, and spending two years in Berlin and Vienna, devoting particular attention to pathology and internal medicine.

He has for several years been a member of the Faculty of the University of Indianopolis (Medical College of Indiana), holding at present the chair of pathology. Through his efforts the Medical Department of the Indianapolis Public Library was established and has grown to over eleven thousand volumes. His interest in this line of medical advancement is shown also by his connection with the founding and promotion of the American Association of Medical Librarians.

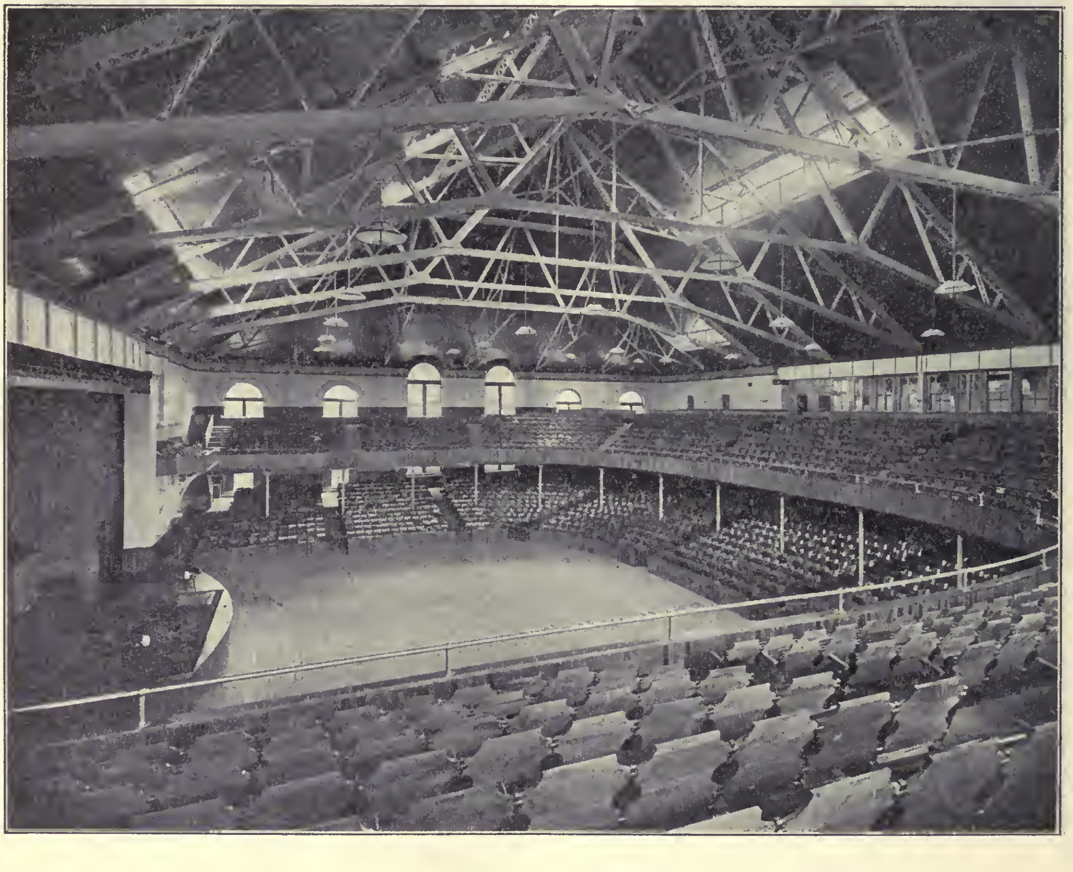
Dr. Wynn was one of those chiefly instrumental in the establishment of the Section on Pathology of the American Medical Association and was the first secretary of the same. His most conspicuous and distinctive service to the medical profession, however, is that of originator and promoter of the pathological or scientific exhibit idea as a feature of medical society work. As chairman of the Department of Pathology of the Indiana State Medical Society in 1897, he presented at the annual meeting an exhibit of pathological specimens and scientific demonstrations of diverse character. The unanimous verdict of the members concerning this unique departure in State society work was commendatory. By the time of the meeting in Indianapolis in 1899, the exhibit had grown to large proportions. The sentiment of approval was forcibly expressed by the Society voting an appropriation to bear the expense of taking the major part of the exhibit to the meeting of the American Medical Association, which was held a few days later at Columbus, Ohio. Its cordial reception at that place was a matter in which the Indiana profession took just pride. Dr. W. W. Keen, president of the Association, and other executive officers were so impressed by it that Dr. Wynn was invited to take steps to inaugurate a pathological exhibit at the Atlantic City meeting the following year. The gratifying success of the Atlantic City exhibit led to its permanent establishment as a feature of the Association and the appropriation of funds for its maintenance. It was made a great common school of pathology for the rank and file of the profession. Four State medical societies, nine medical colleges and universities, ten hospitals and museums of national prominence, the scientific departments of the Government and many private individuals contributed to the collection. This magnificent exhibit containing over 2,100 pathological specimens, representing every phase of pathology, embodied an idea conceived five years previously by Dr. Wynn, and through long and patient toil carried by him to a successful issue. In testimony of the appreciation he was made chairman of the Section on Pathology and Physiology.

George F. Butler, M.D.

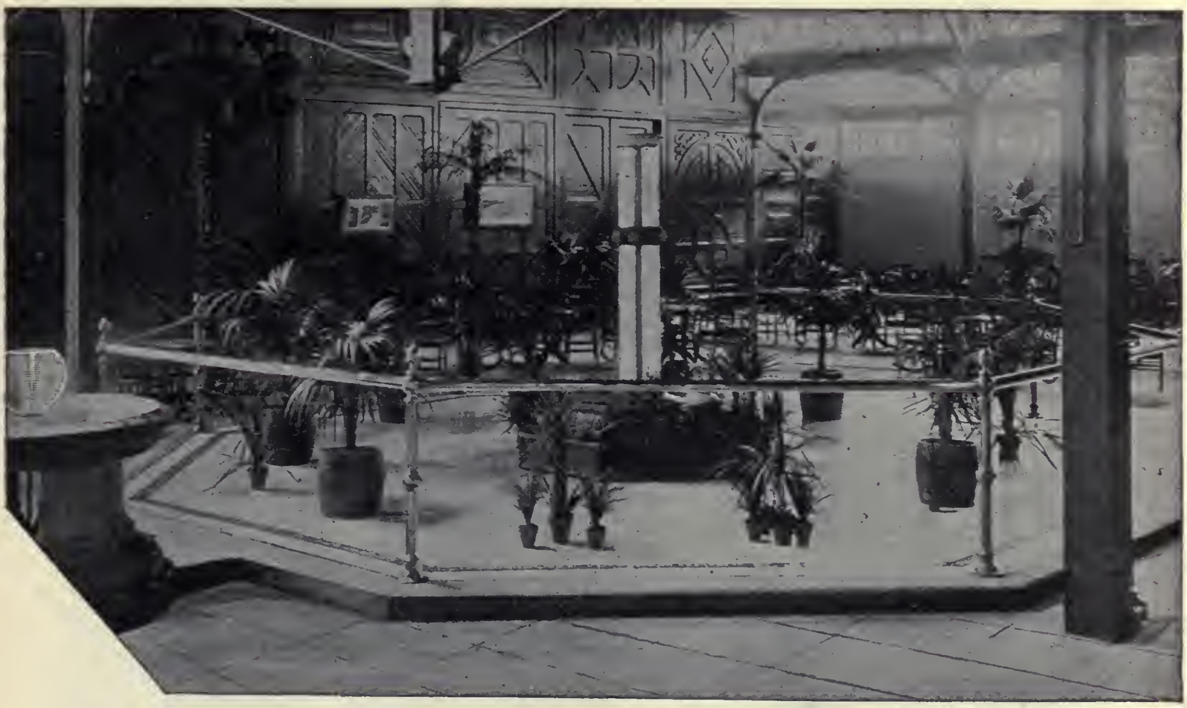
Frank B. Wynn, M.D.

Multiplicity of Bacterial Products.—The theory has been advanced that each variety of bacteria produces a number of toxic products, one of which causes the prominent symptoms of an infectious disease, the others the subsidiary features. From a series of cultural and inoculation experiments made by A. Charrin (Deut. med. Woch., Apr. 17, 1902) with the B. pyocyaneus, it is evident that two classes of products can be isolated from the cultures, those which are soluble in alcohol and those which are not so. The soluble elements affect the circulation and the nervous system principally, but their action is much less marked than that of the insoluble products. The latter may cause phenomena which, although not so rapid in appearance, are more varied and severe and also give a specific character to the disease. The insoluble components are, moreover, the ones which confer immunity and their injection develops a substance in the blood-serum which can withstand a temperature of 55° C. and has a marked effect on the B. pyocyaneus. This produces less pigment and gives off less ammonia; its form is changed and its growth diminished. The substance is neither alexin nor agglutinin as proved by the author, but may be considered a hitherto unknown product. Similar attributes can probably be found in other bacteria and upon this multiplicity and variability, the form, type, localization, etc., of the infectious diseases undoubtedly in great part depend.

VIEW OF CONVENTION HALL,
Where the General Sessions will be held.



INTERIOR OF CONVENTION HALL.



PORTION OF INTERIOR OF HATHORN SPRINGS PAVILION.

In this pavilion will be located the Bureau of Registration, Bureau of Information, Post Office, and Exhibit Halls.

WHERE TO GO.

THE contrast between the places of meeting of the American Medical Association last year and this year are striking enough to excite interest. In 1901 the Eastern physicians met their brothers in the capital of Minnesota, surrounded by the tremendous enterprise and business schemes of the West, were entertained by them in lavish fashion, and taken on a pleasure jaunt of a thousand miles into the weird cañons of the Yellowstone. It was a magnificent trip following a most profitable and well-planned meeting. This year the Eastern men invite their Western hosts to meet them in their pleasure palaces and gardens, where for the last hundred years they have been wont to take their recreation when their money-making hours were over. No place could be more appropriate for a convention of physicians than Saratoga, which is the nation's most celebrated health resort, nor is there any place where physicians would more naturally desire to meet than in one rendered famous by their own profession.

The tendency of bodies politic and scientific, as well as social, has been to meet in Saratoga, where the park-like beauty and luxury of the watering-place make it possible to combine a holiday with a convention. The Convention Hall, which was built for the purpose of accommodating large audiences, and the spacious rooms which various hotels have placed at the disposal of the American Medical Association, all combine to give a meeting place that is a source of delight as well as of convenience. The places in which the various sections will meet are centrally located and commodious. The short walks hither and thither are in the cool of shade-trees with long vistas of elms and wide stretches of lawn.

The BUREAU OF REGISTRATION will be found in the HATHORN SPRING BUILDING on Spring Street. In this same building the BUREAU OF INFORMATION will be found and also the GENERAL EXHIBITS OF DRUGS, APPLIANCES, etc.

GENERAL SESSIONS will meet in CONVENTION HALL on Broadway.

Section on GENERAL MEDICINE, in the parlors of the GRAND UNION HOTEL.

Section on SURGERY AND ANATOMY, in the PATTERSON SPRING BUILDING, Philadelphia Street.

Section on MATERIA MEDICA AND THERAPEUTICS, in the GRAND UNION HOTEL.

Section on NERVOUS AND MENTAL DISEASES, in the GRAND UNION HOTEL.

Section on OBSTETRICS AND GYNECOLOGY, in the THEATER SARATOGA, Philadelphia Street.

Section on PEDIATRICS, in the PARISH HOUSE, 17 Washington Street.

Section on DERMATOLOGY, in the AMERICAN HOTEL, Broadway, opposite Philadelphia Street.

Section on HYGIENE AND SANITARY SCIENCE, in the UNITED STATES HOTEL, Broadway and Division Street.

Section on OPHTHALMOLOGY, LARYNGOLOGY AND OTOLOGY, in the Y. M. C. A. BUILDING, Broadway and Caroline Street.

Section on STOMATOLOGY, in the G. A. R. HALL, POST OFFICE BUILDING, opposite the United States Hotel.

The PATHOLOGICAL EXHIBIT will be shown in the ball room of CONGRESS HALL, Broadway and Spring Street.

The HOUSE OF DELEGATES will meet in the SUPREME COURT ROOM, TOWN HALL, and the TRUSTEES and the JUDICIAL COUNCIL in the UNITED STATES HOTEL.

GLIMPSES OF SARATOGA.

Apart from the serious business of the convention there is offered this year an unusual opportunity for relaxation and social enjoyment. There will be no lack of advice showered upon the delegates, in the form of pictorial pamphlets indicating the drives and points of interest and the historical sites in and around Saratoga. To make a choice would be bewildering and, with the closest economy of time, one could not in the whole number of hours devoted to the convention see the scheduled points of interest. The Committee on Entertainment have, however, provided a series of drives and excursions that will include the chief attractions of this unique village where millionaires and invalids, horse-trainers and scientific leaders meet and mingle in a sort of earthly paradise and then go back to their own places.

If these springs were in some remote corner of a distant State, Saratoga would have the same clientèle as the Hot Springs of Arkansas, or others equally celebrated for their healing powers; but lying as it does in the line of the great water-way, between the Hudson River and Lake George, and shut in in the near distance by the Adirondacks on the west and the White Mountains in the east, it has become a cosmopolitan center as well as a spa. Travelers from early days passed through the region. Historic movements of the Indians, followed by the migrations of white men made in and around the neighborhood of Saratoga, are a historic setting of warfare and battle that is known to every patriotic boy who has read Cooper's novels and studied his American history.

It is said that the first white man to see Lake George, Isaac Joguest, came through Saratoga, a prisoner in the hands of the Hurons. In the early days of Saratoga's settlement relics of the Indians were frequently found and are even at the present time occasionally unearthed. Fort Edward, Ticonderoga, Glens Falls and contiguous towns are the sites of many of the fiercest battles in the conflict for supremacy between the French and the English. The battle of Saratoga and the surrender of Burgoyne are commemorated by the Saratoga monument, which is well worth the time needed to conjure before one the scenes of Revolutionary days.

NORTH BROADWAY, LOOKING NORTH.

The mineral springs are, of course, Saratoga's reason for existence. A fault in the underlying strata of rocks that throws the mineral-laden waters to the surface causes a perpetual outgushing of waters, the medicinal properties of which are as famous as are any in the world. No one should fail to visit these springs, for the morning constitutional procession is one of the interesting sights; but every one should be chary of tippling at the various effervescing and peculiar-tasting springs, for, though the Saratoga waters bring health to those who drink with discretion on the advice of their physicians, they bring dire confusion to the sojourner of a few days, who intersperses the lavish meals of the hotels with indiscriminate therapeutic drinks.

The natural beauties of the region may seem placid and unremarkable compared with the Western grandeur of last year's excursions.

The Adirondack Mountains lie to the north; to the west lie the Kayaderosas Mountains, from which many

CIRCULAR STREET.

VIEW OF UNITED STATES HOTEL,
Headquarters of Officers and Committees.

of the springs are thought to come; the Catskill Mountains lie to the south; to southeast are the Berkshires, and on the eastern horizon may be seen the Green Mountains of Vermont; to the west the great State of New York stretches out to the lakes. This splendid panorama may be best seen by a visit to Mt. McGregor, the scene of General Grant's death, which is but six miles from Saratoga and is well worth visiting. The mountain is over one thousand feet above the city, has a large park laid out on the summit, and affords an excellent view of the whole surrounding country, including the Hudson River Valley.

A visit to Saratoga Lake is another desirable short trip. It may be reached by double-decked electric cars, which run through fields and woodlands; the roads of Saratoga are sacred to the horse and to the automobile.

A moonlight trip on the lake is very attractive and the story of the Indian chief may be told in whispers. The story says that the Indian chiefs were convinced by generations of tradition that the boat of anyone who should speak while on the lake would sink instantly. They consented to ferry a white woman across, only on condition of absolute silence. To convince the savages of their weakness, the woman uttered a loud cry as the boat crossed the center of the lake, only to be told when the boat reached the opposite bank in safety, "The Great Spirit is merciful; He knows that a white woman cannot hold her tongue."

VIEW OF SARATOGA LAKE.

A supper at Moon's Lake House is always in order on such a jaunt, for Moon's dinners are famous. "Saratoga chips" were first made at his hostelry.

The regularly planned drive for Wednesday afternoon should be taken by every one who is free, for at least one long drive is indispensable to a proper conception of Saratoga, for this little village spends $50,000 a year on its highways and they are its greatest beauty, with the long vistas of overhanging elms and the perfect roadbeds. The public speedway, in particular, remarkable for the line of trees down the center, is a picture not to be missed. And then there are great private parks open to the public, like "Yaddo," the home of Spencer Trask, the New York banker, and "Woodlawn," where Judge Hilton, A. T. Stewart's successor, formerly resided. Nor should the hotel gardens be missed. All of them are worth seeing, both by night and by day. They excel anything of their kind on earth.

"YADDO," THE RESIDENCE OF SPENCER TRASK.

The longer trips from Saratoga are most interesting. Those to Lake George, Fort Ticonderoga, Lake Champlain and the Ausable Chasm should be included in the itinerary of every Western visitor who would see a softer type of beauty than is about him in the wondrous western country. The regularly planned trip of the Association is one of great interest.

ENTRANCE TO EXCELSIOR PARK.

To the lover of fresh water and of the canoe a week spent along the water-ways of the Adirondacks will prove a fascinating diversion. With a guide and boat two passengers may be paddled on stream and lake throughout this marvelously beautiful region. All the joys of the wilderness may be had without any of its discomforts, for at regular intervals excellent hotels are to be found.

THE MEDICAL NEWS.
A WEEKLY JOURNAL OF MEDICAL SCIENCE.
VOL. 80. NEW YORK, SATURDAY, JUNE 14, 1902. NO. 24.

SPECIAL ARTICLES.

THE PRESIDENT'S ADDRESS.

DELIVERED AT THE FIFTY-THIRD ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION AT SARATOGA SPRINGS, JUNE 10-13, 1902.

BY JOHN ALLAN WYETH, M.D., LL.D.,
OF NEW YORK.

SINCE the session held at St. Paul a year ago, a former president of this Association, paying the last great debt to Nature, has passed

"To where beyond these voices there is peace."

Full of years and beyond the limit allotted by the Psalmist, Professor Edward Mott Moore, born in Rahway, N. J., July 15, 1814, died in Rochester, N. Y., March 3, 1902. He was one of the founders of the New York State Medical Association, a consistent and loyal friend of our national body and of an organized medical profession. Although his achievements in science were of a high order, his life was not circumscribed within the narrow limits of professional work. He was not only a skilful surgeon, bold and original, but, more than this, he was a citizen of the highest type. The welfare of his neighbors, of his adopted city, State and the Nation were his. May his noble example be emulated, for it is just as much our duty to be true to the obligations of citizenship as to our profession.

Before dealing with the more urgent matters of this meeting, your attention is called to the Fourteenth International Congress of Medicine which is to be held at Madrid from April 23 to 30, 1903.

As your presiding officer I had the honor to receive an appointment from the Secretary of State as a delegate to represent this Association at the Congress, and was requested by him to appoint five additional delegates from this body. In conforming to this request the following gentlemen have accepted commissions and have received certificates from the State Department to the Congress: Dr. Nicholas Senn of Illinois; Dr. Maurice H. Richardson of Massachusetts; Dr. George Crile of Ohio; Dr. Richard Douglas of Tennessee, and Dr. Edward B. Dench of New York.

It should be the duty and pride of the separate State associations to send at least one delegate to this important meeting, and in doing this to correspond with Dr. Angel Fernandez-Caro, Secretary-General, Fourteenth International Congress of Medicine, Madrid, Spain.

This session marks an era in the history of the American Medical Association, for we meet under changed conditions, and in this our trial year, while we are adjusting ourselves to the new order, we confidently ask and expect to receive not only the consideration and forbearance, but the generous help which should be accorded to this experiment in government by which we earnestly hope to avoid the embarrassments and failures that under the old régime characterized the meetings of a body so large and unwieldy as the general session.

These changes involve not only the government of the Association proper, but also a changed relationship of the State association to the national body, as well as the relationship of the county to the State organization. Under the old organization our business was transacted by delegates from State, district and local affiliated societies in the proportion of one delegate for each ten members, while now only affiliated State organizations have the right to send delegates, and these are entitled to only one delegate for each five hundred active members, or fraction of this number. These form the House of Delegates, which is further reënforced by two members from each of the scientific sections of the Association, and one each from the Army, the Navy and the Marine-Hospital Service. Under the old régime the State associations bore the same relationship to the national body as did the city, county and district organizations. Now, only the State associations are represented, and they create the legislative body of the American Medical Association. In other words, the House of Delegates is a federation of all the State associations.

The reorganization at St. Paul, having taken away from the county organization its right to send delegates, also deprived the city, district branches and other minor associations of the same privilege, requiring membership in the county society when such exists as a prerequisite to membership in the State and the American Medical Association. This ruling dropped, at least temporarily, from the rolls of the Association a considerable number of physicians who had long been on the roster from State or local bodies which, by the laws then existing, were in affiliation with the National Association. While this action may have seemed unnecessary and unjust to these members (among whom were many of the most loyal and faithful supporters of the national body), for the common good they should yield to the opinion of the majority, since calm reflection must convince any reasonable mind that one of the wisest steps the Association ever took was when it made the county medical organizations the basis of membership in the national body. There will hereafter be excluded from membership that fortunately small, but none the less existing, group of unworthy members of our profession who, on account of the clumsy rules which formerly prevailed, obtained a place on the roster of the American Medical Association.

To the date of the reorganization in June, 1901, the roster of this Association was so inaccurate and unsatisfactory that the secretary and president-elect undertook the difficult task of obtaining a correct list of members. While one might infer that each organized State and territorial association could, from its records, furnish at short notice the names of all eligible to membership in the American Medical Association, in only a very small proportion of these subordinate bodies was a reliable list available. It then became necessary to direct a circular letter, State by State, to every name on the roster then existing, asking for the necessary information. Since, for final confirmation, these names must be referred back to the subordinate organizations in which membership is claimed, it will be seen that some time must elapse before the completion of a perfectly reliable list. The lack of business-like methods with which our profession is charged is in a manner sustained by this admission, and it emphasizes the necessity for a thorough reorganization of all the societies in affiliation with the national body, upon practically a uniform plan.

Scarcely second in importance to a uniform scheme of reorganization is that of a uniform standard of requirements for the practice of medicine in the various States. It is of vital interest to the welfare of the profession that the question of reciprocity or interstate comity should be settled so that, without any sacrifice of the very highest requirements, a physician in practice in one State, having gone before a competent board, upon change of residence might be permitted to practise without being subject to a second State examination in the place of his adoption. The House of Delegates will, without doubt, act upon this matter at this session.

Referring to the subdivisions of the scientific work of the Association, Article V. of the Constitution empowers the House of Delegates "to authorize new sections which may from time to time be organized, as the necessity for their existence arises." With increasing membership and the consequent larger attendance, it may be imperative in the future to create new sections, but this should be done only after careful consideration, and not until it is demonstrated that the material of high scientific value offered to the twelve sections now existing is more than can be utilized in the time allotted for the meetings.

The By-Laws require every member to register in one of the sections, and it would be well to limit each reader to a single paper before the section chosen. The Association should insist that the officers of sections exercise a most rigid scrutiny of the papers referred to them. If we are to achieve our high purpose, if we wish to attract to our organization the great bulk of the better element of the medical profession, we must present through our sections papers which demonstrate not only the high scientific attainment of the author, but the undoubted value of the material presented. We are judged by our works, and if, at our meetings, and in the publication of our papers in the *Journal of the American Medical Association* which carries them to all parts of the earth, any unworthy material find a place, it can but reflect discredit upon the Association.

Article VI. of the new Constitution says: "The House of Delegates shall have authority to provide for and to create such branch organizations as may be deemed essential to the promotion of the welfare of the medical profession."

For the present I would not advise the establishment of these subdivisions, but ultimately it may be found necessary to divide the States and Territories according to population and geographical position into district branches where meetings may be held at the convenience of the States represented, and without interference with the annual session of the National Association.

Let us hope that the various tri-State societies and the sectional organizations, such as the Southern Surgical and Gynecological Association, and the equally successful Mississippi Valley Medical Association, and others of like character, attracted by the high and unselfish aims of this organization, may appreciate the vital necessity of a united profession and vote themselves into district branches of the American Medical Association. Truly, in such a union there would be strength so potent and influence so far reaching that we could safeguard, without doubt, the material interests of the profession, elevate still higher the standard of medical education, secure the enactment and enforcement of just and rigid medical laws, enlighten and direct public opinion in regard to the broad problems of State medicine, and demonstrate to the world the practical accomplishment of our science.

Article VII. of the new Constitution, which deals with "Sessions and Meetings," refers the place and time for holding each annual session to the House of Delegates. They are also, under Article IX., empowered to appropriate funds for defraying the expenses of the annual meeting, as well as for enabling the standing committees to fulfil their respective duties.

I would recommend to the consideration of the Association the propriety of selecting, in each of the geographical subdivisions of the United States in which the sessions are successively held, some suitable location which has been found to be well adapted to the work of the organization, and to which we could return when the meeting is again to be held in that section of the country. As a scientific body intent upon fostering the growth and diffusion of medical knowledge, it is of vital importance to avoid in the election of our place of meeting everything that could detract from the closest attention to the scientific program. The smaller cities with ample hotel accommodations and halls conveniently located have always yielded a larger attendance before the sections, and consequently a greater benefit to our members than the cities of larger size with their multitude of distractions. Moreover, it seems scarcely in accord with the dignity of this great body to require through its committee of arangements that the physicians of the State and place selected for the convention should be held responsible for the expenses of that meeting. Every suggestion of commercialism should be avoided, and this prosperous organization should assume the entire responsibility and management of these annual sessions.

One of the most important duties imposed upon the House of Delegates is the selection of those who conduct its business affairs. In the past, the Association has shown a keen discernment in securing for its trustees and standing committees men, not only of executive ability, but held in high esteem as representatives of a profession which, according to the Code of Ethics, "should be temperate in all things, and which requires greater purity of character and a higher standard of moral excellence than any other calling."

You will in the regular order of business hear the reports of your five standing committees, and I am called upon to speak of but one, viz., the Committee on Medical Legislation which the By-Laws adopted in June of 1901 direct to be appointed by the president, and to consist of one delegate from each State. In accordance with this requirement I mailed to the president of each State and Territorial organization in affiliation with the American Medical Association a letter asking him to nominate one member for this committee. To all replies to this letter the name of the delegate was sent to the chairman of the National Committee on Medical Legislation, Dr. H. L. E. Johnson, Washington, D. C. It will be remembered that at the session in St. Paul in 1901 the Association ruled that the National Committee on Medical Legislation, consisting of Dr. H. L. E. Johnson, Washington City, Dr. William H. Welch, Baltimore, and Dr. W. L. Rodman, Philadelphia, should be continued until the meeting in June, 1902, and should have the same power to act in the interest of the Association that they had previously enjoyed. All the legislative affairs of the Association I have referred to this committee at Washington, and have authorized them to call the full Committee on Medical Legislation for consultation, advice or aid whenever their services might be required.

In his message to Congress, December, 1901, President Roosevelt recommended the establishment of a Department of Commerce and Industries. In its passage through the Senate the name was changed to that of Commerce and Labor. Before the National Legislature at the same time was a bill known as the Perkins-Hepburn Bill to increase the efficiency and to change the name of the United States Marine Hospital Service to that of the United States Health Service, transferring this from the Treasury to the new department.

The American Medical Association has on several occasions expressed its desire for the establishment of a Department of Public Health, either as a separate department of the Government, or as one of the important bureaus of a department. Probably on account of a lack of thorough organization and coöperation, it has not been able to obtain this important recognition for the medical profession. In view of these repeated failures it would seem advantageous to the scheme of establishing ultimately a Department of Public Health that the Perkins Bill should become a law, because the United States Marine Hospital Service could then with more propriety be removed from the new Department of Commerce and Labor to a separate and independent department. This department should be in charge of a medical officer to direct our foreign and insular quarantine, interstate quarantine, the medical supervision of epidemics, and in fact all matters pertaining to the general health of any group of States or of the entire country.

The work of this officer and bureau can only be carried out with success by the earnest coöperation of the health officers of the various localities and States, and of the advisory board for the hygienic laboratory provided for in the Perkins-Hepburn Bill, for the national and local authorities acting in harmony would be better able to prevent the importation of disease, and to stamp out epidemics which may occur despite the greatest vigilance, and this with the minimum disturbance of the resident public, and of the commercial interests of more remote sections.

As the representative organization of the medical profession of the United States, it is our duty to coöperate with the medical corps of the Army in the effort to procure legislation which will not only uphold the rights and dignity of the medical officers in the public service, but will give better protection to the health and lives of our troops.

The status of the Medical Department of the United States Army is fairly stated in a circular issued by the medical officers stationed in the Philippines, in which they claim that the present condition of affairs "is regarded as a menace to the efficiency of the medical department, as it is felt to be unfair and unjust." In no other staff department is promotion so slow as in the medical department. It is graded for rank, promotion and pay below every other staff department of the Army, and, with the exception of second lieutenant, is graded below the line. A medical officer, under the provisions of the present law, to obtain a colonelcy must pass through three times as many files as an officer of the Quartermaster's, Subsistence or Pay Department; through more than twice as many files as an officer of the Engineers' or Ordnance Department, and more than one and one-half times as many as an officer of the Signal Corps. Officers of the line, having attained the rank of major, have to pass through but four files to obtain the rank of colonel, while the medical officers have to pass through nine files. All these facts are fully appreciated by the younger physicians of our country, and by the volunteer and contract medical officers, hundreds of whom are now serving with troops and are declining to become candidates for a position offering such an unpromising career and so little in the line of promotion and emolument.

The Secretary of War has been officially informed by the Surgeon-General that the number of available medical officers is being rapidly diminished, and he anticipates he will soon be unable to supply the demand for medical officers to replace those constantly returning from the Philippines, unless the prohibition placed by the Secretary of War upon the appointment of additional contract surgeons be removed. He says: "The service would no doubt be more attractive to well-educated physicians if the prospects for promotion were better, and I respectfully commend that Congress be asked at the present session to add to the medical corps of the Army two colonels, six lieutenant-colonels and twenty-five majors. This would give thirty-three additional vacancies and would furnish an incentive to volunteer medical officers and contract surgeons now in service to seek admission to the regular army. I would also recommend that the age limit for volunteer surgeons and contract surgeons who have rendered satisfactory service for two years or more be raised to thirty-six years."

No one who has carefully studied the subject can but conclude that under the statutes now in force many lives have been sacrificed and much suffering has resulted from lack of thorough coöperation between the officer in command and his chief surgeon, and without doubt it would be to the interest of the service if medical officers were always consulted with regard to the location of camps and military posts for the purpose of geting expert opinion upon sanitary questions.

In order to impress upon commanding officers the importance of military hygiene, and the greater necessity for this coöperation with the medical corps of the Army, the Surgeon-General has insisted that there should be established at the Military Academy at West Point a course of instruction on military hygiene.

It is the duty of this Association to lend its best efforts to the Surgeon-General, a former president of the American Medical Association, and one not only in the position to suggest the legislation which would best serve the interests of the Army, but one whom we know to be zealous of the interests, rights and dignity of the medical officers of the War Department.

The committee to whom was intrusted the question of vivisection has been diligent, and it would seem successful, in its efforts to prevent unwise and injurious restrictions upon this important method of research.

The wide dissemination of the contagion of smallpox in the United States within the last few years demands the most earnest attention of the medical profession. Such ignorance or indifference to the immunizing power of vaccination is a matter of surprise in an advanced stage of civilization and, while laws for compulsory vaccination would without doubt be to the best interests of the whole people, it seems so contrary to the spirit of our institutions as to be impolitic as well as impracticable. It falls upon us as physicians to labor unceasingly to impress upon the communities in which we reside the necessity and safety of this immunizing process.

We will be wise if, from time to time, we make a critical analysis of our past, realize exactly what we are doing, and upon this base such conduct as will assure to our successors a more satisfactory condition of our profession, and a higher achievement of this Association. Being human we are too apt to shut our eyes to unpleasant truths; to exaggerate the value and the importance of our own performances, and to think that what we have been taught to believe or what we wish to believe is right and unchangeable. Let us ask ourselves plainly: Is the medical profession of the United States what it should be? Has it won the influential position to which it should aspire? Has it gained the power to secure just and proper legislation? Has it lived up to its obligations, and has the American Medical Association, which claims to represent one hundred and twenty thousand regular practitioners of medicine in the United States, fulfilled its mission? How many of us after due reflection can consistently answer these questions other than by saying plainly and regretfully—No. And wherein lies our weakness? To say we are part of a young and scarcely organized country; that our profession is widely dispersed over vast regions so remote from each other that contact and coöperation are difficult, will not entirely satisfy the fairly critical mind. Such excuses might have been sufficient at an earlier date, but not now. To say that, despite these and other embarrassments, we of the United States have given to mankind the unequaled boon of ether anesthesia; that through the achievements of members of our profession and of this Association medical and surgical science has been greatly enriched; that great specialties recognized the world over have been developed; that operations bold and original have been established beyond controversy; and that by reason of these various contributions to the science and art of surgery and of medicine millions of lives have already been saved, together with the merciful mitigation of suffering which all this implies, may flatter our vanity, but it will not wholly satisfy us when in honest purpose we realize how great are our shortcomings.

It is a fact painful to acknowledge that of the three so-called professions, the ministry, law, and medicine, ours is accorded the inferior position, and we who day in and day out, in every home of the land, are close in the personal friendship of our patients, respected and loved as individuals, are incapable of wielding by organization and discipline the powerful influence of a united profession aiming at a high and honorable purpose. And what have been the results of this house divided against itself? Witness the snail-like progress which marked the various steps in securing our laws for elevating the standard of requirements in medical education and for medical practice. Witness the opposition to our efforts in securing better sanitary regulations, and in the struggle to protect the public from the horde of uneducated or misguided persons who, under the guise of Christian science, osteopathy, and other schisms, insist upon being permitted to take charge of and treat human beings suffering from diseases without submitting themselves to the State examination required of us.

There are, in my opinion, two principal causes of this evident weakness of the profession. First: The insufficient methods of medical education which have prevailed for the greater part of the first century of our national existence. Second: The lack of organization.

The Code of this Association says: "Those admitted into our ranks should found their expectations of practice upon the extent of their qualifications." We stand committed as the champion of higher medical education and the elevation of the standard of requirements applicable not only to the entrance examination, but to a rigid examination before the degree is received, as well as by the State before the permission to practise is granted. To this rigid examination this Association, by its rules of conduct, demands another important essential. The highest order of learning, the greatest amount of skill may not make one an honor to our calling, for "there is no profession from the members of which greater purity of character and a higher standard of moral excellence are required than the medical, and to attain such eminence is a duty every physician owes alike to his patients and his profession."

The American Medical Association is the sponsor for organized medicine in the United States, and the failure to accomplish this end implies the failure of this Association. We must not fail, nor will we, unless we falter in carrying out the plan of reorganization in the liberal and progressive spirit which characterized the session of 1901. It is our plain duty to endeavor to bring about the adoption by the various constituent bodies of a practical uniform constitution and by-laws for each county, and for each State, modified only as the local conditions may require, and all governed by the same rules of conduct. These rules, as at present given in the Code of Ethics, adopted many years ago by this Association, should be also a subject of serious consideration at this time, for we can not claim consistency or be logical in argument until there is but one code for the national Association and for all of the State organizations represented in the national body. This, as you well know, does not now prevail. Some years ago there lived and labored among us for the good of mankind and the honor of the profession a man whose genius was of the highest order, and whose fame carried the name of American surgery throughout the civilized world. He was one of those fearless pioneers in science who found his place even on the frontier, clearing the way for those who were to follow. In 1876, at the meeting of the American Medical Association, in Philadelphia, Dr. J. Marion Sims, in his presidential address, referring to the Code of Ethics, says: "The time will come when your organic laws, like the Constitution of our country, will require modifications and amendments to suit a higher intelligence, a broader education and a greater destiny." In my opinion, the time has come when we can not absolve ourselves from the responsibility of doing away with the inconsistencies for which we may now be properly criticized.

Such have been the changes in the statutes of a majority of the States since the Code was adopted by the respected founders of this Association that we find it insisting upon conduct on the part of our members which is contrary to the laws of the States in which they reside. For instance, one section forbids a member of the regular profession to act upon a board of examiners which has to pass upon legal qualifications of persons not graduates of regular medical colleges, while in thirty-eight of the States represented here the civil statutes require these boards, which are composed in great part of members of the Association, to examine, pass upon and sign certificates or licenses to practise of homeopaths, eclectics, and other subdivisions of medical practice. In six of the States, including the District of Columbia, the law requires three separate examining boards. In Mississippi, North Carolina and South Carolina, the examining boards are entirely composed of regular physicians, and in one of these States (Mississippi), while none but regulars are allowed on the board, the law explicitly says that "distinction shall not be made between applicants because of the different systems or schools of practice that may be chosen." In almost all the States and Territories regular physicians are compelled by the laws of the State in which they reside to disobey the injunctions of this section of the Code of Ethics.

A modification of this and other sections of the Code must be a part of the liberal plan of reorganization which we have essayed.

In conclusion, I ask this Association to stand for more than the healing art. To labor for the alleviation of suffering and for the restoration of health is a noble vocation, but to teach our fellows how to avoid disaster is a prouder privilege and a higher duty. We should be teachers of men. How better can we protect the public from disease in all its various forms and insidious processes than by perfecting in every county and in every community an organization which shall be ever watchful and insistent upon obedience to the laws relating to the public health?

Jefferson Alumni Banquet.—The annual banquet of the Alumni Association of Jefferson Medical College was held Wednesday evening, May 28th, at the "Hotel Walton."

SUTURE OF HEART WOUNDS.[1]

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In 1896 three operations for the suture of wounds of the heart muscle were done. Two are recorded as having been done in 1897. Four are credited to 1898. In 1899 the heart was sutured eleven times, in 1900 three times, and in 1901 nine times, three of this last set being done in this country. This year two operations have thus far been reported. This makes a total of thirty-four operations in the six years following the first attempt to treat, by a simple surgical procedure, an organ usually supposed to be particularly vulnerable, in fact, so vulnerable that any interference, even for surgical purposes, might be followed by immediately fatal results.

There is more than enough material here for our consideration at this time, and I beg you to follow me in the necessarily brief discussion which I offer you. In order to start with some knowledge of the results of these operations, before any discussion, in general or in detail, is attempted, a short review of them will be necessary.

Review of Cases.—As regards the manner of wounding, all these cases, except two, were due to punctured or incised wounds, the two exceptions being bullet wounds. The particular injury to the heart was inflicted on the ventricles thirty-two times, the left ventricle being implicated seventeen times and the right thirteen times. In two cases only were auricles opened, once the right and once the left, and there are three cases in which my information is incomplete. In most of the cases in which details are given the pleura is reported wounded, and usually there was a hemothorax, the collection representing, in large part, the overflow from the pericardium.

In the cases reported the heart was reached variously, depending on the location of the original wound in the skin and the choice of the operator, but either a flap of all of the tissues of the thoracic wall was turned up, or a resection of two or more ribs was practised. The particular detail is of no great moment provided that the heart is properly exposed. The special method of treating the heart wound is of interest, for it involves the choice of suture material for a novel situation, the time at which the suture is introduced and tied with reference to the heart beat, and the depth of the stitch in the heart muscle. In our cases three operators are recorded as having used catgut, Fontan of Paris, Marion, and Launay; in all other instances in which the suture material was specified silk was used, and in most cases the sutures were interrupted, though in a small number a continuous suture was practised. It is of interest to note that these operators particularly avoided including the endocardium in the suture. One of them definitely reports introducing and tying the suture during diastole.

As regards the closure of the wounds, the tissues involved in the flaps or incisions were, of course, replaced; in seven instances drainage of the pericardium and pleura was practised, and in four the pleura alone was drained. The other cases are said plainly to have been closed without drainage, or nothing is said of the matter at all.

Results.—Of the total number of these cases five died of hemorrhage on the operating-table, and ten died very soon afterward of the effects of hemorrhage or the shock of the operation; so that nearly half of the cases that survived the injury long enough to be subjected to operation died during or very shortly after that operation. The other group, nineteen in number, had various fortunes, but thirteen of them recovered and only six died. I think it is fair to stop a moment and consider these facts. Surely the fifteen who died of hemorrhage or shock with operation would probably have died of hemorrhage exactly the same without operation. No fatal traumatism is inflicted by exposing the heart; and stopping the hemorrhage from an incised or punctured wound in the ventricles is a simple matter when the heart is once exposed; indeed, pressure with the finger or a tampon will stop it temporarily. At all events the operation and suture did not add materially to the amount of blood lost and so can not be counted as having hastened the death from hemorrhage, and the average amount of shock I can not estimate. But I believe that it is fair to say that these patients had from the first, practically no chance to recover, and that, if this had been known, the operations need not have been done—but I say this with full appreciation of the fact that the inevitable fatality could not have been definitely predicated in any case. Of the other nineteen the comment is, plainly, that they had a chance to recover. In each of them the suture of the heart was a successful procedure; in not one instance was the fatal outcome due to a secondary hemorrhage. The six who died succumbed to the infection subsequent to the wound and operation. Of the thirteen who recovered four did so in spite of a concurrent infection. But the point is that of these thirty-four cases, fifteen had, really, but very slight expectation of benefit from the operation and died probably neither in spite of it nor because of it—nineteen had expectation of recovery from operation, and in thirteen that expectation was realized.

I do not wish you to think that I am trying to make these cases give a better percentage of recoveries than they really do. That percentage, as the whole list stands now, is about one-third. But if we wish to consider only the final success or failure of the suture of the heart muscle we must limit our inquiry to the cases in which this procedure was really tested, and then we see that the percentage of recoveries may be considered a little more than two-thirds.

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[1] Abstract of an Oration on Surgery delivered before the Fifty-third Annual Meeting of the American Medical Association, Saratoga Springs, N. Y., June 10-13, 1902.

Slow Advance in Heart Surgery.—The road to the heart is only two or three centimeters in a direct line, but it has taken surgery nearly 2400 years to travel it, for I take it that the operation of opening the chest for an empyema, which was known to Hippocrates, was a direct predecessor of the attempt to treat other thoracic viscera. We all know that before the antiseptic and aseptic eras pleurotomy for empyema gave very terrible results, and there could be but scant encouragement to draw surgeons to fresh fields. However, more than a century ago (1798) Desault, with the logic and precision which still characterize the French school, laid down the rules for opening the pericardium for an empyema situated in that sac and anticipated much of the technic of to-day, and it took surgery ninety-eight years to pass from the pericardium to the epicardium, across a space that is such only potentially.

The experience of the various operators has been, as might therefore have been expected, that the heart of man was no more resentful of intervention than were the hearts of other mammals, and that it not only could be handled, and even partially lifted from the pericardium, but that its muscle could be sutured so as to close a wound, just as can be done with the skeletal muscles. However, in the case of the systemic muscles rest can usually be enforced, either completely or partially, during the process of healing, but this can not be done with the heart. Here comes the great difference between the heart muscle and the skeletal muscles, both as regards suture and the reparative process, the heart must continue to act for the whole of the time.

The question centers, first, on the possibility of properly suturing, that is, placing a practical suture in the moving heart, and, second, on the result of the healing process. The first question is one of only technical moment, for the work on animals has shown that it can be done, and the experience of those who have sutured the human heart has not disclosed any special difficulty in the procedure, but the matter and manner of the sutures are debatable. The general advice is that the sutures of muscle should be of silk and it has been most frequently used in the heart muscle, but three of the successful cases, the two of Fontan's and the one of Launay's, were sutured with catgut. Elsberg has advised, as the result of his experiments on rabbits and dogs, that the suture material should be silk, and that the suture be an interrupted one, and very superficially placed, believing that deep sutures will tear out while superficial ones will hold. He also advises that the suture be placed and tied during the diastole of the heart.

Experimental Research.—To discover, if I might, the exact value of these somewhat confused matters, I have exposed the hearts in eleven dogs, and made wounds of various sizes and in different directions in the left ventricle, limiting myself to that particular cavity, since it is the one most frequently wounded. In each instance, except perhaps one, I verified the opening of the cavity of the ventricle by passing an instrument into it so as to get a free spurt of blood during one or two systoles. It was found that this verification was a practical necessity, for the non-penetrating wound of the myocardium will give forth, during systole, a spurt so large that it could easily be confused with one from the cavity of the ventricle. These wounds were then sewed with ordinary commercial cumolized catgut; in some deep and superficial stitches were combined; in some very deep, so as to surely penetrate the endocardium, were used, and in others very superficial stitches; and the variations of interrupted, continuous and recurrent continuous were practised.

In the earliest operations toothed thumb forceps were used to pick up a few muscular fibers to steady the organ for the making of the incision and the placing the sutures. At the first pinch the heart, of course, delayed a systole and then began to beat rapidly and violently and continued this as long as the forceps were in place. It was exactly as if the heart were surprised and at first checked by the intrusion of the forceps teeth, and then recovered to make violent and strenuous efforts to escape from the grip, and if the forceps' hold was continued it usually succeeded in this by the tearing of the fibers. One of my dogs died on the table from hemorrhage due to the tearing of the muscle in the bite of the forceps and my inability to at first catch the edge of the open wound in the bottom of a pericardium overflowing with blood, and although I did finally succeed in getting in two sutures they were placed too late.

To overcome this difficulty with the forceps I put into the heart, before incising it, two long suspension loops of silk, dipping the needle carrying them deep into the ventricular wall. These gave complete control of the organ, for they did not tear out, and even though the heart was hanging from them its function continued, and much less tumultuously that it did in the bite of the forceps; and with them the heart could be lifted quite half-way out of the pericardial incision, or it could be swung to one side or the other, or rolled over in either direction, its range of motion being limited only by the great vessels at the base.

I placed these loops side by side and about a centimeter apart, and could then incise between them, hold the wound open, by traction on the loops, to verify penetration and then, crossing the loops, could absolutely stop bleeding and steady the heart, for under this control the point of the incision seemed to be the starting point of the systolic waves.

Even with the incision coapted and held relatively motionless by the crossed and taut suspension loops—so that the placing of a suture was no more difficult than in an indifferent tissue—I found it impracticable, yes, impossible, to make a diastoles but to watch the knots as one should into place in the succeeding diastole, and to tie the knots in the ones following. To do this would require a man to work with accuracy, and yet with perfectly-timed breaks in his work, in various fractions of successive seconds—for these hearts are always beating more than one hundred times to the minute. And the impossibility which I encountered has made it very difficult for me to believe that anyone, even if he has attempted it, has ever really done it. Nor can I see what is gained by it.

The heart does not bleed in diastole, it bleeds in systole, and the suture to be efficient must be tied at that time, and the way to do it is to tie quietly and firmly, during the rapid beating of the heart, and to take no account of split second diastoles but watch the knots as one should watch the knots of the ligature in a major vessel. And the same judgment which controls the tension of the suture should control the depth to which it reaches. I can not agree, from what I have seen of the actual working of the matter, that a superficial suture will hold when a deep one will tear out. One is suturing the myocardium, not the epicardium. Of course, it is inadvisable to penetrate the endocardium, but it is, at the same time, and fortunately, a difficult thing to do. I did it once because I intended to do it, and I had to take a larger needle than I had ordinarily worked with, and definitely carry it through the heart wall and return; and from this I learned that, with the medium-sized, full-curved needle which one would commonly use, the penetration of the left ventricle is not to be feared.

On this point it only remains to be said that, in the case in which the endocardium was included in the stitch, the strand of suture stretched across the cavity of the ventricle was the occasion of the formation of a little globular clot, which was found at the autopsy to be firm and white, and surrounded by a large post-mortem clot.

Elsberg's very complete studies of the healing process showed that the muscular fibers in the grip of the suture atrophy and are replaced by fibrous tissue, and he points out that, very evidently, there would be less of this lower grade tissue in the case of an interrupted suture; but, so far as I have been able to judge, the difference amounts to very little practically, and the saving of time in the continuous over the interrupted suture is manifest, and it is the method finally advised by Terrier and Raymond a year ago. I had thought that the lessening of the number of knots on the epicardial surface by the use of the continuous suture might be a special point in its favor, but the matter seems to be unimportant, for all knots quickly sink into the tissues, leaving a flush surface which is covered with fibrin.

Causes of Death.—For my experiments I have used dogs—primarily because of the size of the heart in the larger dog—and I had the same difficulty that other experimenters have had with the animal, for there is no mediastinum, the whole thorax being lined by one continuous membrane, and as soon as this is opened both lungs collapse, so that artificial respiration by bellows is needed. There are two important points in connection with this fact: a very large serous surface is exposed to the air and to infection, and it is practically imposible to avoid leaving a certain degree of pneumothorax when the chest is closed. Collateral traumatism and infection, then, led to the early death of most of the dogs; indeed, only two lived ten days and then both died of empyema and pyopericardium. This makes it impossible for me to speak as confidently regarding the catgut suture as I should like, for *a priori* I should prefer in this place the absorbable suture, because a stitch once in is there to stay, and the opportunity of going back and removing it, if its presence be resented by the tissues, can not be looked for. Still it is to be noted that one operator, Fontan of Paris, has the distinction of having twice sutured the heart with the recovery of both patients, and Launay has successfully closed two wounds in one heart, the suture material in all three cases having been catgut, and on the other hand, Nietert of St. Louis has also two successful heart sutures to his credit, his suture material being silk. Still, if it can be shown that the healing process takes place to a practical extent during the persistence of the catgut it will be reasonable to argue that no great objection can lie against the absorbable suture. In Elsberg's paper he asserts that reparative processes are in train in twenty-four hours, in forty-eight hours there is a dense round-cell infiltration; by the fourth day spindle cells appear; by the seventh day they replace the degenerated muscle fiber, and by the tenth day the granulation tissue is becoming fibrous tissue. He reports several rabbits killed on the fourteenth day with the wound in the heart firmly healed; and in one instance a rabbit dead of sepsis had a firmly-closed heart wound on the eighth day. In two of my dogs, both dead of sepsis on the tenth day, the heart wounds were firmly closed, with no evidence of leakage or hemorrhage, although in one the infective process had attacked the epicardium and penetrated the myocardium. It does not need to be said that these dogs count for very little; but the inference is simple, from the whole evidence, that wounds of the heart muscle heal very rapidly and that the process may be practically completed quite within the life of a catgut suture. And the evidence of Fontan's two patients, one of whom was infected, and Launay's case of two wounds in one heart, are on the same side, and I shall therefore assume that catgut is, at least, a permissible suture material.

Success of the Closure of Heart Wound Finally, it has to be said that in my dogs these sutures, however placed or tied, always controlled the hemorrhage and closed the opening, and that the healing processes, as they were studied, followed a course practically similar to that in Elsberg's experiments on rabbits, up to the death of my animals. They show that the repair in heart muscle is in no way different from the repair in skeletal muscles, and that it is no more interfered with by the action of the heart than are the nutritive processes of the organ.

I do not know any of the successful cases of heart suture in man to have been fatal later, but there is reference to a case of Izzi's in which the heart was wounded but not sutured, and the man recovered, but on the twenty-eighth day, having left the hospital, he made considerable effort to lift a weight and rupture of the cicatrix in the heart wall and sudden death followed. Of course, the wound in this heart had been filled by a coagulum, and in the process of healing this was organized or replaced by cicatricial tissue, and there never had been the proper coaptation of the heart muscle in the edges of the cut.

So far as the heart itself is concerned the proposition for its suture, in case of wound, is properly established; and if it were a superficial organ and easy of access, and if the path by which it is reached could easily be closed again, the whole matter would be eminently simple. The operation would be more frequently done for the occasions demanding it would more frequently arise, and the whole technic would be quickly worked out in detail. But the heart, while it is close to the surface of the body at one point, is not a superficial organ, and to reach it the bony and muscular chest wall has to be traversed—a matter of no special import—and two serous sacs have to be invaded. Herein lies the great difficulty.

Interference of the Pleura.—It is true that in a dissection the pericardium can usually be reached without a wound of the left pleura, but it only can be done by taking the pleura definitely into account. The anterior limits of the sac are various and in the dissecting-room it has been found to extend across behind the sternum almost to the right border of the bone. Commonly, it overlaps and lies just internal to the left border of the sternum as far down as the fourth cartilege, and from this point gradually passes downward and outward, crossing the sternal end of the border of the fifth cartilage and just internal to the middle at the sixth. A wound, therefore, to reach the pericardium and heart without injuring the pleura would have to be placed in the sixth interspace and close to the sternal edge, and be directed almost exactly backward. This place is so small that practically it is never found, and it is necessary to consider that all wounds which penetrate the pericardium have traversed the pleura, and it is across the same tissue and sac that the surgeon must pass who attempts to repair the wound. There is another point to be considered here. The opening of a serous sac, either accidentally or surgically, exposes it to infection, and the serous membrane, by a power inherent in it, deals with such infection as occurs unless the latter overwhelms it. The question has been thoroughly studied by all, in its relation to the peritoneum, but I wish merely to refer to the fact that the peritoneum offers opportunities for the localization of an infection which can not otherwise be disposed of, and that intestinal rest may contribute greatly to this localization. Both the pleura and pericardium differ from the peritoneum in this respect—the surfaces of neither offer pockets or recesses in which an infection may be confined, and constant motion incident to breathing and the heart beat tends to disseminate pathogens and quickly to distribute them over the whole surface of the sac.

So far as the arrangement of the lymphatics of the pleura is concerned, its power of absorption should be greater than that of the peritoneum, and in certain cases of infection, as in the empyema of pneumonia, it does show considerable ability to deal with the condition; but in view of the great frequency of infection of the left pleura in connection with heart wounds, I am obliged to believe that the inability to obtain surgical rest for the tissue is a prominent factor in producing and perpetuating the condition.

In writing on wounds of the pleura and lung, Terrier and Reymond claim that infection of the pleura is not likely to occur unless there is a coincident wound of the lung. They argue that the infection probably comes from a bronchus, and base the treatment necessary for a traumatic hemothorax on the presence or absence of hemoptysis. In no one of the clinical histories of these heart wounds which I have seen is there mention of hemoptysis, but they nearly all had hemothorax, large quantities of blood being in the pleura, and a large percentage had a subsequent infection.

Sepsis and Drainage.—Of the thirty-four cases, nineteen lived long enough for the development of an infection, and in ten it developed, and of these six died, showing that infection so affects prognosis in these cases that a man infected has not so much as half a chance to recover; or, to put it differently, more than half of the cases were infected, and of these more than half died. It is of particular interest to know the time of implantation of the infection, and I have found records of nine other cases of wounds of the pericardium and heart which were not submitted to any primary operation, and of these three had local infection, and one had primary local healing but died of a peritonitis. The number of cases is very small, but so far as they go they show that about one-third of them are infected by the wounding instrument and that primary operation increases the chance of an infection to more than half; this, however, must not be taken as counting against the doing of the operation, for its object is to control conditions which lead to certain death, and even with an infection recovery is not impossible. The knowledge of the great likelihood of an infection at the time of the receipt of the wound must be made use of, and one must consider if such a wound is not to be treated as one already infected. If this be done some method of drainage will be employed, and the detail of its arrangement is complicated by this fact, that one serous sac, the pericardium, must be drained across or through another, the pleura. The advice is given, probably in view of this difficulty, that both pericardium and pleura be closed without drainage, but some operators have drained and their results merit consideration. So far as I can learn, eleven of the thirty-four cases had primary drainage arranged, four for the pleura alone, and seven for the pleura and pericardium. Of the eleven seven recovered though two had infection. Of the four who died, two died of sepsis, and two of collapse before the possibility of knowing if sepsis was to develop or not, and if we exclude these last two we have nine cases drained and seven recovering.

Now, on the other side there were nine cases that had no primary drain, and did have infection, and of these five recovered. The number of cases is small, seven out of nine and five out of nine, but in these cases, as in many, many others, a hair, perhaps, divides the chances of success from those of failure, and where we have only small statistics at hand, it is with those that we must work, and on them base our future actions.

CASES OF SUTURE OF WOUNDS OF THE HEART.[1]

Operator and Year.	Location of External Wound.	Chamber Wounded and Size of Wound.	Time of Operation after Injury.	Anesthetic.	Results and Remarks.
27. Ninni. 1901	Left of sternum	R. A.			Death in four days.
28. Mignon et Sieur. 1901		R. V.			Death.
29. Fontan. 1901		L. V.; catgut sutures.			Recovered. Had empyema sepsis.
30. Brenner.[2] 1901	Left of sternum, near sixth cartilage.	R. V.; 7 cm.	Following day.	Yes	Death on table; degenerate heart muscle.
31. Watten.[3] 1901	Fourth right intercostal space	R. V.; 3.5 to 4 cm.			Recovery; right pleura wounded; pneumothorax.
32. Lastaria. 1901		L. V.			Died soon.
33. Launay.[4] 1902		L. V.; ant. and post. walls: pistol shot; catgut sut. in each			Recovery; no complications.
34. Nictert.[5] 1902	Left sixth interspace, to right of papillary line	L. V.; far back, 2 cm.; penetration uncertain; two interrupted silk sutures	14½ hours		Recovery; purulo-sanguinolent effusion and thoracotomy.

[1] Cases 1 to 26 were tabulated by Geo. T. Vaughan, M.D., in the MEDICAL NEWS of December 7, 1901.

[2] Wiener klin. Woch., 1901, No. 11. [3] Deutsche med. Woch., 1901, No. 37. [4] La Presse Médicale, March 29, 1902. [5] Phila. Med. Jour., May 3, 1902.

In the drainage of the pericardium there is a point worth mentioning. The material should, of course, be gauze; it may be put in a small space left unclosed at the lowest point of the wound (Mignon et Sieur) and it does not need to go deeply into the sac, for with the patient supine or reclining the heart will sink in any effused fluid toward the dorsal side of the sac displacing the fluid toward the ventral side, where a drain may easily reach it; but the fluid must pass upward from the pericardium toward the skin opening, and this is, of course, a disadvantage. For the pleura a drain may be arranged to make its exit by the same opening as that for the pericardium or, and this seems the wiser plan, it may have an independent opening near the posterior axillary line, where it will be of most service if empyema does develop, and may, in such a case, obviate the need of a secondary thoracotomy. Of course, if no sepsis supervene all drains should be very shortly removed.

In the time allotted this paper on the program of the Association it has only been possible to discuss the two technical points of suture and drainage, and the matter of the symptoms and the anatomic details of the wounds which have been put on record have, in spite of their importance, been passed by. Very briefly, the symptoms may be listed as consisting of the external wound in the precordial region, the general evidences of hemorrhage, the disturbance of the heart function sequent to the trauma and the acute anemia, and the local signs of the filling of the pericardium and, secondarily and in most cases, the pleura. As regards the wound itself, I believe, from examining the hearts which I have punctured and incised, that the endocardial wound is always smaller than the epicardial wound, excepting, I should imagine, in the bullet wound cases. This difference in the size of the wound at its two limits will explain the living of some with apparently large wounds but from which the amount of bleeding has not been commensurate with the size of the visible wound. It is necessary only to revert to the fact that the different parts of the heart behave somewhat differently when wounded. The thicker wall of the left ventricle offers a greater obstacle to hemorrhage and a better opportunity for suture than any other part; wounds of the right ventricle bleed more and are more difficult to suture, and the thin-walled auricles are saved from a lethal hemorrhage, when they are wounded, by the comparatively low pressure of the blood in them, while in their loose structure a practical suture is a difficult thing.

Conclusions.—The operations which have been recorded mark only the beginning; the heart is now destined to be submitted to many manipulations provided they may be done without stopping its action at once. It is a very unsafe thing to prophesy, but that more will be attempted can easily be inferred, for interference with the mitral orifice has already been suggested, and the immediate neighborhood of the heart has been invaded and a sacculated aneurism of the aorta has been tied off, the success of this well-executed maneuver being prevented only by the failure of the atheromatous vessel walls to heal. Possibly, the next step may be delayed as long as the application to the heart of common surgical methods was delayed after Desault had taught us to open the pericardium. Perhaps it may come soon. It is not impossible that a new surgical technic may have to be created, but it is most probable that the next step will be based on the new application of the very old matters of the suture and drainage.

THE RELATION OF MEDICAL SCIENCE TO COMMERCE.[1]

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I HAVE been informed that there is no rule of the Association which fixes the subject of this address. I hope I may be pardoned when I depart from the custom which my predecessors have usually followed when they confined the subject of the address to the progress of medicine during the year just past.

We live in a period of the greatest activity of the history of the world. Modern inventions annihilate time and distance. Electricity and steam approximate the most distant parts of the civilized globe. Vast amounts of capital are invested in electrical, steam and other related interests.

Competition is great in all the affairs of men. The struggle for supremacy between nations and between men was never so fiercely contended as now. The world is richer than ever before. Great individual fortunes, the result of the efforts of the few years of a single span of life, are seen everywhere. The wage of the laborer in our country is larger than ever before and he may command the necessaries as well as many of the comforts of life.

This modern restless activity, with its nerve-racking, the evil results of a luxurious life, the moral obliquity which it may breed, as well as many other conditions which affect the health of individuals, while of interest to medicine, does not concern us in the consideration of the broader subject of this paper.

The Broader Application of Medical Science.—Medical science is interested in and is of greater importance to the world than ever before, in protecting individuals, states and nations from infectious diseases, which are rendered more dangerous than formerly because of a denser population, increased facilities of communication between the peoples of the earth, by travel and by national and international interchange of food and other commercial products.

Medical science, too, is closely identified with the vast monied interests of the merchant marine and of national and international commerce. Quarantine against the spread of infectious disease is applied wisely or foolishly in direct ratio to our knowledge or ignorance of the cause, the means of transmission and the evolution of disease. So, too, medicine has to do with the knowledge which will enable man to escape from and finally remove the conditions which cause infection and which render a country uninhabitable to civilized man.

Medical science must safeguard man against infection and intoxication from parasitic diseases of animals used for food and from contaminated and adulterated food and drink. Not only from a humanitarian standpoint is medical science related to commercial pursuits, but the sciences related to medicine have done much to preserve animals used for food and to protect agricultural interests of many kinds from disease and destruction.

One may say, I think, that in no other pursuit which engages the serious attention of men are there as many earnest, unselfish and philanthropic workers as there are to-day in the broad field of medicine.

In the various departments of science related to medicine one finds educated, skilled, energetic, earnest workers after truth, willing to sacrifice home, friends, health and life for the advancement of the science which has for its primary object the conservation and prolongation of human life. Pecuniary reward for them is never large and never commensurate with the character of the work.

Furthermore, great and astounding as are the modern commercial inventions, the progress made in medical science during the last twenty years is equally great.

Is modern medicine prepared to meet the demands of modern progress concerning the questions which interest humanity and commerce? Let us answer the question by a brief retrospect of the progress of medicine and by a statement of the present status of medical science.

First Application of Physical Sciences to Medcine.—From the latter part of the eighteenth to the beginning of the last quarter of the nineteenth century the science of medicine developed steadily upon a rational physical basis. Jenner's discovery of the protection of the human race against variola by vaccination with cowpox illuminates with noonday splendor an era otherwise gloomy with its hypotheses, theories and superstitions concerning disease.

This single brilliant achievement of the end of the eighteenth century was the beginning of the evolution in medical science which made the nineteenth century notable. The application early in the nineteenth century of physics, of physiology, of pathologic anatomy and of chemistry, to the study of disease, developed a more exact knowledge than before existed. To Auenbrugger that early period owes much through the discovery of methods of physical examination which were slowly developed and perfected by Corvisart, Laennec, Piorry, Skoda, Wintrich, Traube, Louis, Cheyne-Stokes, Graves, Corrigan, Flint, Scudamore, and others. Pathologic anatomy made wonderful strides under the labors of Virchow, Rokitansky, Arnold, Stilling and their students. Physiology was developed by the labors of Johannes Müller, Brücke, Helmholtz, Trousseau, Vierordt, Foster, Carpenter, Magendie, and their disciples; and the fuller knowledge embraced in physiologic chemistry was added to the rapidly-broadening field of medicine by Hoppe-Seyler, Schwann, Stricker, Prout, Liebig and others.

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[1] Abstract of an Address in Medicine, delivered at the Fifty-third Annual Meeting of the American Medical Association, Saratoga Springs, N. Y., June 10-13, 1902.

Bacteriology.—Bacteriology became an exact science with the discovery of Robert Koch of cultural methods which made differentiation of bacteria possible. In twenty years the bacterial cause of tuberculosis, typhoid fever, cholera, diphtheria, pneumonia, pyogenic processes, erysipelas, gonorrhea, epidemic meningitis, epidemic dysentery, the plague, charbon, glanders, tetanus, influenza, and lepra has been proved.

Parasites.—The discovery of the hematozoön of malaria by Laveran; the recognition of the ameba of dysentery by Loesch; of the ray fungi and especially the actinomyces as infective agents in the lower animals and in man, and the more exact knowledge of other animal parasites infecting man and animals, which the microscope has made clear, have been as epoch-making in parasitology as the discoveries of Pasteur and Koch in bacteriology.

The knowledge of the cause has led to a study of the life-history of infective organisms outside of as well as in the animal body. The rôle which insects which infest animals play as definitive or intermediate hosts has been studied and proved. The discovery by Manson of the transmission of *Filaria sanguinis hominis* by the mosquito was of vast importance as a suggestion of the mosquito as a definitive host in malaria. The investigations of Manson, Ross, Celli, Grassi, Dionise, Marchiafava, Bignami, Koch and others have made our knowedge of malaria exact. Not only may we recognize the disease definitely and apply the drug treatment more rationally, but the knowledge of the means of its transmission from man to man enables us to apply preventive measures which are of the greatest importance from a commercial as well as from a humanitarian point of view.

The brilliant research work of our own Reed and Carroll in 1900 in Cuba, by which they proved that the mosquito of the genus *Stegomya* is the sole means of the transmission of yellow fever from man to man is of great importance as a scientific fact. The influence of this discovery upon mankind as a prophylactic against a disease which has killed multitudes and also from a monetary point of view, in reference to commercial pursuits, is not appreciated at this time as it should be.

Hardly less important is the fact that the *Bacillus pestis* may infect fleas and these in turn infect rats, mice and man. It is important, too, to know that pests like the house-fly may be carriers of infective bacteria from refuse filth to our kitchens and tables and contaminate food and thus infect us with typhoid fever, cholera and perhaps other diseases which are propagated by filth.

Protective Inoculation.—Long before bacterial toxins were recognized as the cause of disease phenomena, Pasteur established the principle of protective inoculation with bacteria of lessened virulence, which was brought about by attenuation of the bacteria by a modification of cultural methods and also by serial inoculation of certain lower animals. This he successfully applied to charbon in sheep and cattle and to chicken cholera.

His final life's work was no less important, in firmly fixing the immunizing influence of attenuated bacterial inoculation in rabies. Pasteur recognized the fact that in hydrophobia the brain and other nervous tissue of an infected animal are capable, when inoculated into another animal's brain, of producing the disease. That the infected brain, used for inoculating animals, contained the bacteria, which caused the disease, was proved by the fact that a stage of incubation occurred in the inoculated animal and that a series of animals were successfully inoculated consecutively from the first. Pasteur then successfully attenuated the unknown bacterium of hydrophobia present in the nervous tissues of an inoculated animal by desiccation of the nervous tissue in a sterile apparatus by methods too well known to repeat.

It is now a well-known fact, however, that inoculation against disease was practised by the Chinese 1000 years ago. To Jenner, however, do we owe the first example of the protective inoculation by means of an attenuated virus. This attenuation we now know was established by the accidental inoculation of milch cows with smallpox, producing a modified disease, vaccinia.

Serumtherapy.—When chemistry had revealed the nature of bacterial poisons and experiments established their relation to the phenomena of disease, it was proved that substances were formed in artificial culture media and in the blood and tissues of infected animals which had the power to neutralize the effect of the bacterial poison in other animals infected with the same organism. Further investigation showed that an animal inoculated with the laboratory preparation of antitoxin was protected against the disease. Furthermore, it was found that the blood serum of an animal inoculated with bacteria in a non-fatal and repeated dose contained an antitoxin. When the blood serum of the infected animal was injected into a healthy animal, the latter was protected against the original disease.

Antitoxin was, therefore, proved to be formed in artificial media of bacterial cultures and in the bodies of infected animals. When the antitoxin thus formed was injected into an animal it had the power to protect it against the particular bacterial infection or, if given subsequent to the infection of the animal, to mitigate the severity of the disease or to check it entirely.

Thus, by Koch and his students, was serumtherapy established as a principle. Upon this principle there has been established and given to the world the antidiphtheritic serum of Behring and of Roux.

A curative or immunizing serum has been developed for Asiatic cholera, tetanus, erysipelas, plague, epidemic dysentery, streptococcus infection and other diseases. While the serum treatment has not proved successful in all the diseases in which it has been used, it has been so successful in some—diphtheria, for instance—as to firmly establish the principle of serumtherapy.

Influence of Bacteriology upon Practical Medicine and Surgery.—These practical results in specific prophylactic and curative therapy are but a small portion of the influence which bacteriology has had upon medicine. The stimulus given by bacteriology to the study of pathological anatomy, physiological chemistry, clinical phenomena and of physical and chemical changes of the fluids and tissues of the body, has resulted in a knowledge so comprehensive that medical science has been revolutionized within the last twenty years.

Bacteriology made possible the comprehension of perfect cleanliness and enables the surgeon to invade every part of the body without fear of infection and has saved thousands of lives which twenty-five years ago perished miserably as the result of disease at that time inoperable, or the result of infection from contact with the surgeon.

Bacteriology has stimulated laboratory clinical diagnosis. Bacterial reactions to sera and blood cultural tests are of the greatest aid to diagnosis. Clinical research work has command of an armamentarium consisting of a knowledge of pathological anatomy, of physiology, of bacteriology, of chemical physiology and of physics, which allows of a precision in diagnosis never before at the command of the physician.

Prevention of Infection.—To-day no sane man believes in spontaneous generation. The presence of an infective disease either bacterial, protozoic, parasitic or fungous, means the recognition of progenitors in the near environment of the infected organism. In practically every one of the diseases of animals above named the scientific investigator has already discovered the nature of the infecting agent, knows its life-history, what conditions are most necessary for its propagation and multiplication and what will remove and annihilate so dangerous an enemy.

Our Department of Agriculture and especially the Department of Animal Industries have done much to place comparative medicine on a scientific basis. Briefly stated, there is not a fungous-parasitic or animal-parasitic disease of the lower animals which can not, with our present knowledge, be stamped out for all time.

Smallpox.—But what of the epidemic scourges of the earth, smallpox, yellow fever, cholera and the plague? No rational individual can for a moment doubt the protective influence of bovine vaccination against smallpox. Medical science, therefore, possesses the knowledge to rid the earth of variola. From a humanitarian point of view, this knowledge is priceless. Still, let one but compute the sum saved to the nations of the earth by vaccination, estimating each life saved at $5,000, the usual valuation placed upon human life by statute. Great as would be this sum, it is many times less than that saved to the commercial interests of the world by the control of the disease which even inadequate vaccination has afforded. Think for a moment of the loss to commercial interests by quarantine and other restrictive measures, in the event of an epidemic of variola, without protection from vaccination.

The Plague.—The plague, the Black Death, which was first recognized in Europe in the year 543 as the *Peste Justinenne,* became pandemic in the fourteenth century and it is said that 24,000,000 people died of it. In 1894 Dr. Yersin, Director of the Pasteur Institute at Hong Kong, discovered the *Bacillus pestis.* He elaborated a serum which has since been used with success as a prophylactic and curative agent. Haffkine prepared a protective vaccine which has also proved successful as a protective inoculation. It has been used in hundreds of thousands of cases in India with no harmful results and is said to reduce the susceptibility at least 75 per cent. and the mortality about 90 per cent.

The plague, the Black Death of the fourteenth century, still exists and rages with fearful mortality in communities which have no regard for hygienic surroundings. It is communicated to people through the abraided skin, or by flea bites, through the respiratory tract apparently by bacteria in dust-laden air and also through the alimentary tract by contaminated ingesta. Modern hygienic measures, which consist of perfect cleanliness, isolation, the destruction of vermin and the use of Haffkine's vaccine as a prophylactic and Yersin's curative serum, serve to control the disease. There can be no doubt that if sanitary authorities will take proper precautions to recognize the disease, proclaim its presence and then control it by the means which science has discovered, that the terrible scourage may be safely held in check and finally abolished from every civilized community.

Yellow Fever.—The mortality from yellow fever in the United States during the last one hundred years, 1798-1897, has been about 80,665. This gives an average annual mortality of 807. Several severe epidemics have occurred and it has prevailed extensively in small towns where the mortality records have not been kept. Hence these figures do not represent the full annual death-rate from the disease. Yellow fever has been the scourge of the West Indies, Central and South America, Mexico and of our Gulf States.

Recognized as an infective disease, indefatigable search has been made for the bacterial cause by many earnest workers. Although the specific bacterium of yellow fever is not known, a most brilliant discovery has been made of the means of transmission of yellow fever by means of the mosquito (*Stegomya fasciata*) by two of our countrymen: Walter Reed, Surgeon U.S.A., and James Carroll, Contract Surgeon U. S. A. Twenty years ago Finley associated the transmission of yellow fever with the mosquito, but no proof of this was given until the epoch-making and decisive experiments of Reed and Carroll. Furthermore, these experimenters proved that fomites contaminated with the vomitus and discharges of yellow fever patients do not transmit the disease to man.

In Havana, Cuba, the sanitary authorities of the United States have attempted during the last year or more to test the fact of yellow-fever transmission by the mosquito. To this end the city was made clean; the breeding-places of mosquitoes in and about Havana were destroyed as far as possible and persons suffering from yellow fever were isolated and protected from the mosquito. Thus the number of moquitoes was much diminished and care was taken that remaining mosquitoes did not become infected by biting yellow fever patients. As a result yellow fever disappeared from Havana and for the first time in years no case had occurred up to May 1 of this year. The usual marine quarantine regulations of the United States restricting the non-immune travel from Cuba was postponed. Furthermore, the Congress of the United States will probably modify the quarantine regulations in reference to yellow fever to meet the more hopeful conditions which the researches of Reed and Carroll have established in relation to the definite transmission and control of the disease.

Malaria.—Malaria has not borne as important a relation to commercial communication between people as have yellow fever and the plague. Nevertheless, it has had an enormous influence upon the health and prosperity of the inhabitants of certain regions where it is endemic and at times epidemic in its prevalence. The principles which prevail to induce malaria in a certain region is the existence of human malaria and of the mosquito of the genus *Anopheles.*

The mosquito is annoying but harmless until it becomes infected with malaria by biting a human infected with the disease. Such an infected mosquito may inoculate all the people it subsequently stings. In this manner a region ordinarily free from malaria may become infected by the importation of a case of malaria from a distant point. It is also possible that a mosquito infected with malaria can be transported by railroad or ship in the luggage or clothing a considerable distance and then sting and infect individuals in its new environment.

Malaria is so widely disseminated over the world and the opportunity for continued infection of the mosquito so great that it seems almost hopeless to try to eradicate the disease. The principle upon which malaria may be fought has been suggested by science and has proved of value. This consists of the destruction of the mosquito and its breeding-places. The prevention of the infection of the remaining mosquitoes by isolation of the malarious individual from the mosquito and the diminution of malarial material in man by an attempt to cure him with quinin and other antimalarial remedies.

Experiment has already demonstrated that non-immune individuals may live safely in the most malarious districts, with adequate yet simple protection from the sting of the mosquito infected with malaria. Man thus protected against malaria may now explore, settle in and develop regions of the earth hitherto inaccessible because of the danger from the deadly tropical malaria.

This address would become too long were one to take up other infectious diseases, although in some of them the science of medicine has made such successful investigations that the knowledge of the cause, means of propagation and dissemination is exact.

Typhoid Fever.—I can not close without saying that if in typhoid fever we could employ, unembarrassed by the great cost of the necessary measures, the precautions which science affords to prevent water and food contamination, the disease would be effectually abolished. The great cost of the measures necessary to stamp out typhoid fever would, however, be an economic measure, inasmuch as the immense value to the state, of the conservation of the labor of the thousands sick and the lives saved each year would more than compensate for the treasure spent.

Value of Medical Science Not Recognized.—However much medical science has done for humanity and great as the value of the knowledge of infectious disease is to the commercial interests of the world, scientists have not, especially in our own country, received the recognition and financial aid from the state, from corporations or from wealthy individuals which they deserved.

Medical Science Should Receive Financial Support.—Medical science should receive the moral and financial support of states and municipalities in the employment of the measures which science has proved to be efficacious in modifying, restricting and abolishing infectious disease. Wealthy corporations and individuals, should establish institutes of original research in properly-contructed and equipped hospitals and laboratories. There are many earnest, indefatigable and conscientious medical investigators could make more perfect the knowledge we already possess of many of the infectious diseases and, unembarrassed by financial needs, could search for the cause, the means of transmission and the prevention and cure of the diseases of which we know but little.

Funds, too, should be created to support the cost of committees of scientific investigators in regions now dangerous to the white man. By such means the many plagues of the tropics would be investigated and conquered. Regions uninhabitable or dangerous to the Caucasian would become accessible to settlement and commercial intercourse. Civilization, humanity and commerce would be advanced and multiplied.

It is right, therefore, that medical science should demand of the monied interests of the world the recognition which, though long withheld, is her just due. This she asks, not that individuals may profit in either fame or fortune, but that she may the more readily rid the world of infectious diseases for the sake of humanity.

ORIGINAL ARTICLES.

INTESTINAL ANASTOMOSIS: FURTHER REMARKS THEREON.[1]

BY FREDERICK HOLME WIGGIN, M.D.,
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THE gynecic surgeon in the course of his pelvic work is frequently obliged to separate portions of adhering intestines, and consequently is liable to be called upon unexpectedly to excise and unite damaged portions of the intestinal tract. No surgeon, therefore, should undertake the performance of an intra-abdominal operation until he has prepared himself to do this by the understanding of a few well-known general principles and the mastery of simple technical details requiring a moderate degree of skill.

To Joubert and Lembert we are probably indebted for the knowledge that when injured peritoneal surfaces are approximated lymph is quickly thrown out and rapid union of the parts follows, provided the inflammatory process be not septic in character. Gross of Philadelphia in 1843, in his monograph entitled "An Experimental and Critical Inquiry into the Nature and Treatment of Wounds of the Intestines," pages 3 and 5, called attention to the importance of including in an intestinal suture some portion of the fibrous coat lying between the muscular and mucous coats of the bowel. Important as these points were, they became available only after the establishment of aseptic methods had given surgeons the courage to extend their field of labor to include the abdomen and its contents. In the last part of the nineteenth century, Senn gave a great impetus to surgical interference with the intestinal canal which soon resulted in the announcement of two new methods of uniting divided intestinal ends, that of Murphy of Chicago, who accomplished it by the aid of his ingenious button placed in the lumen of the gut, and that of the late Professor H. Widenham Maunsell of London, who obtained the same result by means of sutures passed through all the coats of the gut in such a way that when they were tied the knots were in the lumen of the bowel, the divided intestinal ends having been invaginated and drawn through a slit made for the purpose in either the proximal or distal end, about two inches from the point of division. He also pointed out the necessity for care in approximating the mesenteric border of the divided portions of the bowel. The writer, in reporting the second successful operation by this method, in a paper read before the Society of the Alumni of Bellevue Hospital, November 1, 1893, published in the *New York Medical Journal* of January 20, 1894, called attention to the fact that a fifteen-volume solution of hydrogen dioxide could be safely and advantageously used to cleanse the peritoneum when contaminated by infectious material, and also to the fact that the peritoneal cavity might be left full of saline solution, with advantage to the patient, when the abdominal wound was closed, not only for the purpose of lessening shock, but in order to prevent intestinal adhesions, to aid in the readjustment of the intestines and omentum to their proper positions, as well as to lessen the danger of septic peritonitis, and to aid by osmosis the action of the bowels. Dr. W. A. Evans, in a paper read before the Section on Surgery of the American Medical Association in June, 1900, published in Volume XXXV., page 1459 of the *Journal of the Association,* says that the danger of secondary stricture following the performance of circular enterectomy due to the development of scar tissue need not be feared. This view has been abundantly supported during the last ten years by the experience of the writer as well as by that of other surgeons. Experience has also proved the objection raised by Maunsell to the use of secondary sutures, on the ground that they obstruct the intestinal circulation and so interfere with firm plastic peritonitis, to be without foundation, and has shown that they can safely be used when considered desirable. A point that has been found to be of practicable importance in repairing intestinal damage is the necessity of removing all diseased or thickened intestinal tissue and of uniting that which is normal. In the writer's experience, horsehair has proved to be the most useful material for suturing the gut, as it is elastic and permits the employment of a small, round needle—milliners' No. 6.

It is well to remember that complete union of approximated peritoneal surfaces occurs in about sixty hours, and that after the third day the patient's bowels can be safely moved.

By intestinal anastomosis is meant the restoration of the interrupted continuity of the intestinal canal. This may be accomplished in diverse ways, many of which, however, have been discarded. For the purposes of this paper the methods considered will be that of Murphy, the writer's modification of Maunsell's method, described in a paper read before the New York State Medical Association, October 19, 1898, and published in the *Medical Record* of November 19th of the same year, and Connell's modification of the same procedure.

The writer's objections to the Murphy method were set forth in a paper read before the New

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[1] Read before the Section on Obstetrics and Gynecology of the New York Academy of Medicine, March 27, 1902.

York State Medical Association, October 11, 1894, published in the *New York Medical Journal* for December 1st of the same year, and were as follows: It places in the intestines a foreign body which is occasionally therein retained, thus rendering necessary a second laparotomy for its removal. It makes the patient dependent on the craft of the cutler rather than upon the skill of the surgeon, the spring of the button being made at times too strong and at other times too weak; there do not seem to be indications by which it can be known when the instrument is properly constructed; there is the trouble of being obliged to have a button or buttons of the proper size, a perforation of the bowel following the use of a button a little too large for the portion of bowel united; there is danger in the weight of the button which may act as an anchor to hold the bowel in a flexed position, thus causing obstruction; there is danger of the lumen of the button becoming plugged with hard fecal matter; there is danger in the holes placed at the ends of the button for the purpose of drainage causing a perforation, the intestines being pressed into them and against their edges if care be not used in pressing the segments together; the danger of this accident may be lessened by placing a sponge behind each segment of the button before they are pressed together. Further experience during the last six years with this method of uniting the interrupted continuity of the intestinal tract has confirmed the views herein expressed, and in connection with this subject it may be of interest to quote in part Dr. Murphy's reply to the objections to his method just alluded to, which were published with the writer's paper and seemed to strengthen his position: "The statement that the button is a foreign body in the intestinal tract and may be retained, thereby rendering a secondary operation necessary for its removal, is true, and it has occurred. What danger is there, when the case is properly managed, should it occur? This would, therefore, appear to me to be a very small objection, and I cannot consent to its being of sufficient importance to designate the instrument unsurgical. The second objection, that we depend on the craft of the cutler rather than on the skill of the surgeon, is not well taken. We might as well argue that we depend on the silk manufacturer for the silk used; we do, but the cautious surgeon tests his silk; he should also test his button. I have volunteered to examine the buttons for all of the manufacturers. I have sent models to all manufacturers who have requested them, and would gladly inspect, and do inspect, all buttons sent to me for that purpose. I have found a number of reliable instrument-houses making perfect buttons. With this advantage, there is no conscientious surgeon justified in using a button unless he knows that it has been inspected or has been manufactured by some reliable house. There are defective buttons on the market: this I am powerless to avoid, as our ethics prevent me from procuring a patent on the button, thereby controlling its manufacture. I certainly do not believe that the fact that defective buttons have been manufactured is a valid argument against the utility of the device."

Mr. L. A. Bidwell, in the course of an article in the *Clinical Journal* of London, September 21, 1896, page 339, in speaking of the Murphy button says, "The results in this country with the Murphy button have not been as good as the inventor's; in several cases the button has produced ulcerative perforations of the intestines below an otherwise successful joint. To my mind it is unsatisfactory to trust a patient's life to the efficacy of a spring when we have methods which do not involve such a risk." In the March, 1902, number of the *Annals of Surgery*, page 352, O. H. Allis of Philadelphia records some failures of the button to give satisfactory results; on the other hand, at the last meeting of the International Medical Congress, Murphy presented statistics of 1,620 cases of intestinal anastomosis in which his button had been used, and in which list malignant and non-malignant cases were included, with a mortality of 19.3 per cent., while the result of the operation in sixty-six cases of a non-malignant character the mortality was only 2 per cent.

In comparing the relative merits of the Murphy method of anastomosis with that devised by Maunsell in the paper already alluded to, the following statement was made which expresses the writer's views at the present time as well as when they were written. "The method of intestinal anastomosis devised and described by Professor Maunsell in the March, 1892, number of the *American Journal of the Medical Sciences,* if not so alluring as that of Professor Murphy, has, to the writer's mind, many advantages over the latter. If the union cannot be as quickly effected, it requires for its performance no mechanical device—only a few needles, silk or horsehair for sutures, and experience and general surgical skill. That the method is not as frequently employed as it deserves to be is due to its having been introduced about the same time as the Murphy method, which, from its apparent safety, ease, and lack of special skill required for its accomplishment, has temporarily captivated the medical mind. In time it will be determined which is the better method. The writer believes that in the future the Maunsell method will at least be more frequently employed, if it does not eventually displace the other."

The description of Maunsell's method of intestinal anastomosis was revised by the writer and published in the *New York Medical Journal* for December 14, 1895, because of Professor Maunsell's expressed dissatisfaction with his original article—wrong descriptions having been placed under the cuts—and his death before he could attend to the matter for himself; the chief value of his work lay in calling the attention of the profession to the fact that divided bowel ends could be safely united by means of sutures passed through all the coats; that the knots could be placed within the lumen, and that care must be taken to include the mesentery when passing a suture at the lower border of the bowel. The part of his method that was faulty was the making of a slit near the end of either one of the sections of the divided bowel and the bringing out through this opening of the invaginated bowel ends before uniting them by sutures. After further experience with the method it soon became apparent to the writer that these objectionable features were unnecessary complications of an otherwise satisfactory procedure and could readily be done away with. The attention of the profession was called to this fact in the course of a paper read before the New York State Medical Association, October 19, 1898, published in the *Medical Record* of November 19th of the same year.

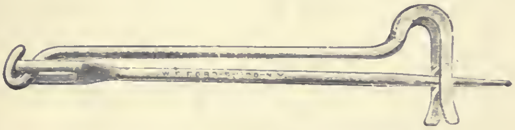

FIG. 1.

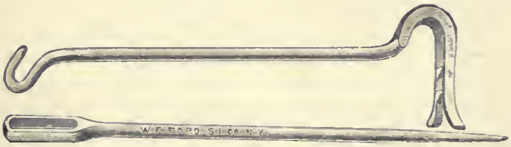

FIG. 2.
McLaren's clamps.

The modified operation as successfully practised for many years past by the writer is as follows: The portion of intestine to be excised is brought outside the cavity, accompanied by about six inches of healthy intestine on either side. It is next emptied of its contents above and below the damaged spot by passing it between the finger and thumb and gently pressing it. The empty gut should be clamped on either side of the damaged portion of bowel at a point six inches distant, to prevent the escape of fecal matter at the time of excision or during the subsequent manipulation. A useful instrument for this purpose is the McLaren clamp (see Figs. 1 and 2) or strips of gauze may be used for the same purpose. The general peritoneal cavity should be protected with sterilized pads wrung out of hot saline solution. The portion of the intestine to be removed is excised by means of a V-shaped incision, having its apex in the mesentery and its lateral borders on either side of the diseased area (see Fig. 3). The mesenteric vessels are tied before being cut, by passing a needle armed with catgut around them and tying them. The wound in the mesentery is closed by means of interrupted sutures (see Fig. 4). After the divided ends of the intestine have been carefully washed with hot saline solution followed by a small quantity of a fifteen-volume solution of hydrogen dioxide, the proximal and the distal ends are united by means of two sutures which are passed through all the intestinal coats. The first suture is placed at the inferior or mesenteric border and is passed in such a manner as to include a portion of the mesentery on both sides, as shown in Fig. 5; it is then tied in the bowel and the ends are left long in order that, by means of it and the next suture to be inserted, the intestinal tissues can be

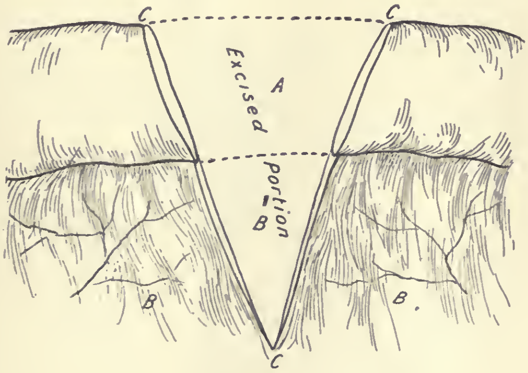

FIG. 3.
A, B, portion of intestines and mesentery removed; *B, B* mesentery; *C, C, C,* lines of the incision.

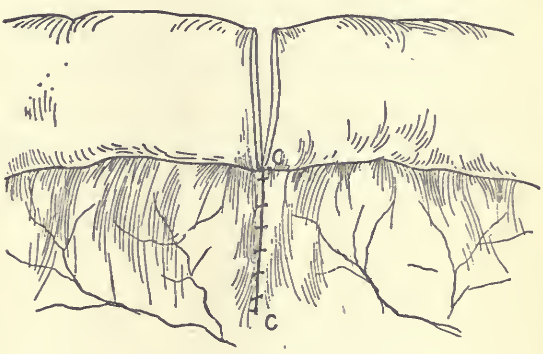

FIG. 4.
C, C, incision in mesentery united by interrupted sutures.

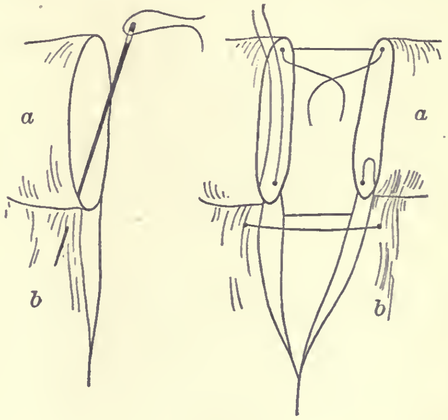

FIG. 5.
A, A, segments of bowel; *B, B,* segments of mesentery.

held in place while the other sutures necessary to complete the union are being put in. The second suture is placed directly opposite at the highest point of the superior border and after it has been tied its ends are left long and are held by an assistant, as are those of the first suture; thus the intestinal tissues to be united are held in place while the other stitches are being passed; the third suture is passed for convenience in holding the parts together midway between the first two and in a similar manner, its ends, however, being cut short after it has been tied; three other sutures are passed in the same way through the intestinal tissue which is included between the first and third and between the second and third sutures, the needle going from within outward and piercing all of the intestinal coats, then back through the peritoneal, muscular and mucous coats to the interior of the other segment of the bowel; the sutures are then tied in the gut and the ends are cut off short; or these seven sutures can be conveniently and rapidly placed by partially passing the needles through the intestinal tissues and leaving them there till all are passed as shown in Fig. 6, when each is drawn through in turn and the sutures are tied.

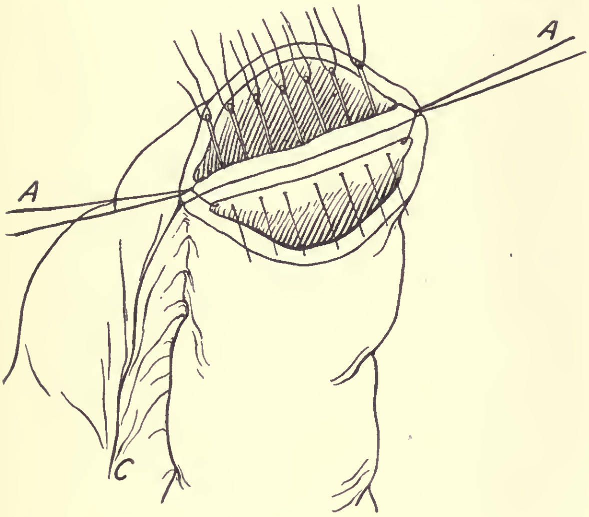

FIG. 6.

A, A, sutures, the ends of which are temporarily left uncut and by means of which the tissues are held, while the needles are being placed. *C.* mesentery.

When these nine stitches have been placed and tied, half the circumferences of the divided bowel ends have been united, and the process of suturing can be most conveniently carried on by next placing a suture half-way up on the ununited side, leaving its ends long and using them to hold the tissues while the parts are sutured as before. This suturing of the parts is continued till the last one is to be placed, when a Lembert suture is substituted. If the sutures have been properly placed about one-eighth of an inch from each other and from the edge and have been tied sufficiently tight, it will be found that the peritoneum is turned in and that the stitches—with the exception of the last one—are not visible (see Fig. 7). If some of them have been so loosely tied that the sutures can be seen on the peritoneal coat, it is best to insert a few Lembert sutures at these points. Before tying the last one or two sutures it is well to introduce into the gut one or two ounces of a saturated solution of the sulphate of magnesium in order to insure the early action of the bowels. The sutured portion of the bowel should then be washed with a small quantity of a fifteen-volume solution of hydrogen dioxide, then with saline solution, and returned into the abdominal cavity, which should also be washed and filled with saline solution before the abdominal wound is closed.

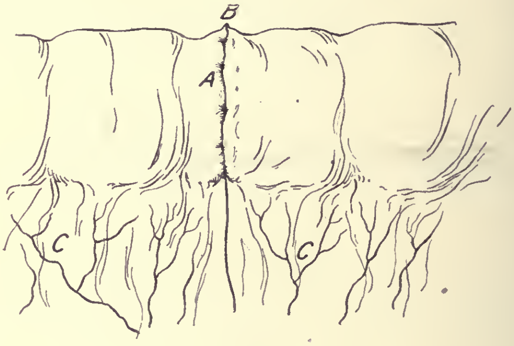

FIG. 7.

This figure shows the intestine after the completion of the anastomosis. *A,* line marking the point of union between the ends of the bowel, showing that the peritoneal coat is well turned in, and that the sutures and knots are all inside the gut with the exception of the last, for which a Lembert suture at *B* is substituted.

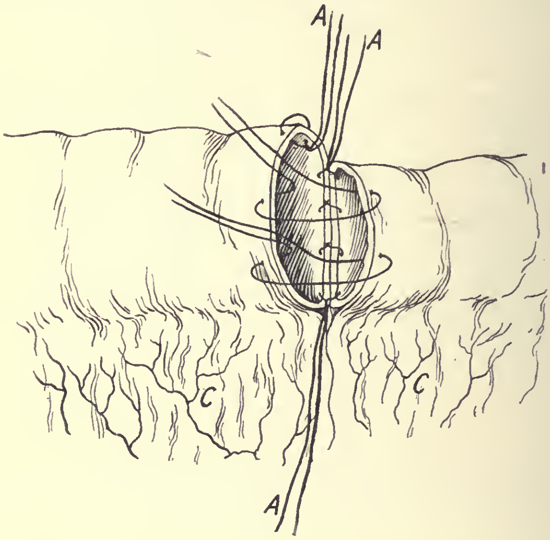

FIG. 8.

A, A, A, sutures, the ends of which are temporarily left uncut. *C, C,* mesentery.

By the method of suturing just described any portion of the intestinal tract can be united to any other portion. Anastomosis of segments of ileum and colon may be effected by this method in the following manner: A suture is passed through all the coats of the greater and lesser intestinal segments at their mesenteric border, care being taken to adapt the border of either segment to the corresponding border of the other; this suture is tied and the ends are left long; a second suture is passed through the side of the larger segment, starting from the lumen at the point where the superior border of the smaller segment touches it and through which the suture is also passed, and is tied, the ends being left long; a third suture is passed through all the coats of the highest free end of the larger segment. The location of these sutures, which are also used to hold the parts in apposition while the other sutures are being passed, and the accurate adaptation of the mesenteric border of the segments are shown in Fig. 8. The other necessary sutures to unite the divided intestinal edges are placed in the manner already described and the anastomosed bowel ends appear as shown in Fig. 9.

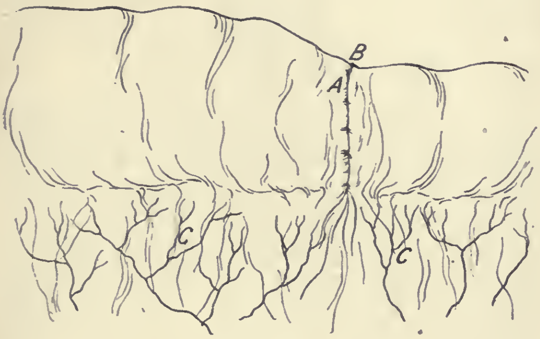

FIG. 9.

Diagram showing the united segments of the colon and ileum. *A,* line marking the point of union between the ends of the bowel, showing the peritoneal coat well turned in and that the knots of sutures are all inside gut, except the last one, at point *B,* which is of the Lembert variety.

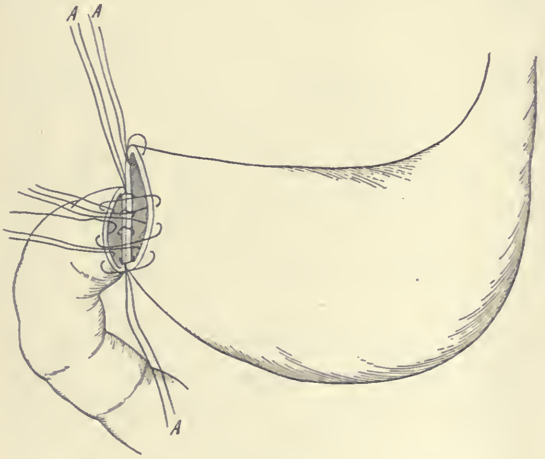

FIG. 10.

A, A, A, sutures with ends left long, uniting the cut surfaces of the stomach and duodenum.

Gastroduodenostomy or Gastroenterostomy.—Prior to the performance of operations on the stomach, the patient is deprived of food for two days and the stomach is cleansed by several irrigations with an antiseptic solution during this interval. The patient is then anesthetized and the abdomen opened by means of either a transverse or a longitudinal incision. Fig. 10 shows how the duodenum may be united to the stomach by means of this method after pylorectomy.

Owing, however, to the partial fixation of the duodenum, when the disease is extensive, it is better to anastomose the jejunum to the stomach at the point of its greater curvature. Gastroenterostomy is performed as follows: A portion of the jejunum, as close to the duodenum as possible, is drawn out of the abdominal cavity, emptied of its contents and clamped. A portion of the greater curvature of the stomach is also drawn into the wound and the jejunum is brought into contact with it. A longitudinal opening, an inch and a half long, is then made in the superior border of the gut. The corresponding opening in the stomach should be an inch above the greater curvature and parallel to it, as shown in Fig. 11. The extreme ends of these wounds are now united by sutures passed through all the coats of the stomach and intestines and the sutures are tied, the ends temporarily being left long. This accomplished, the openings are sutured in the manner already described, the needle passing through all coats of the stomach and bowel, with the exception of the last one or two which must be of the Lembert variety.

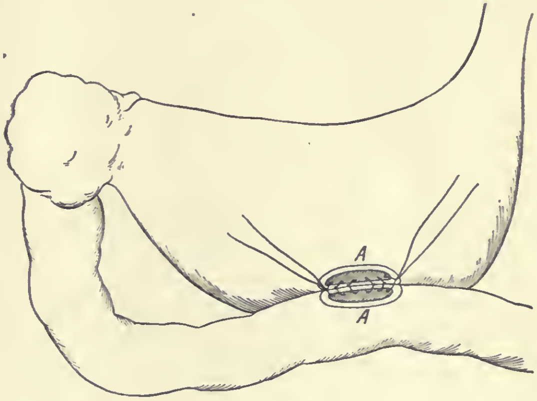

FIG. 11.

A, A, opening in the stomach in line of the greater curvature, and in the longitudinal axis of the upper end of the jejunum.

J. Gregory Connell of Chicago, in the course of a valuable article entitled "Intestinal Sutures," published in the *Philadelphia Medical Journal* for January, 1899, described a slight modification of the operation, which consists in substituting the loop stitch, with which the mesenteric border of the divided intestine is united, for the circular one employed by the writer, and in drawing the ends of the last suture down through the lumen of the gut to the outer side of the lower segment, for the purpose of tying them and placing the resulting knot on the inside of the lumen of the bowel by means of a threaded needle inserted in the space between two of the sutures at a point opposite the suture to be tied, as shown in Fig. 12.

Both of these changes in detail, are, in the writer's opinion of no practical import, especially the last, for it would appear to be necessary, after separating the united tissues by passing the needle from the outside of the bowel into the lumen between them, to bring them into close approximation again by means of a Lembert suture, otherwise leakage of the intestinal contents might occur at this point. Of his work, Connell says in his paper already alluded to, "All that can be claimed as new is the method of tying and placing the final knot within the lumen on the mucous membrane."

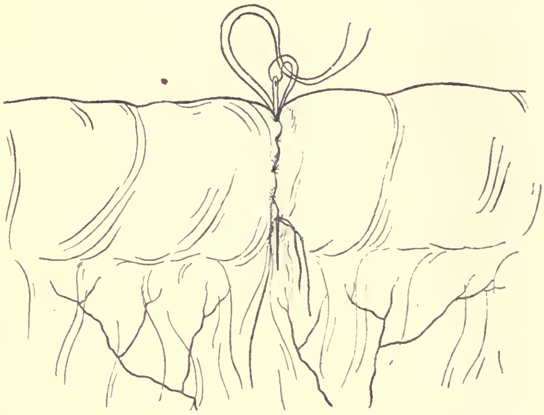

FIG. 12.

In conclusion, the surgeon should remember, when he wishes to unite severed portions of the intestinal tract, that only normal and clean peritoneal surfaces should be united; that hydrozone diluted 50 per cent. with saline solution can be safely used to disinfect the peritoneum; that when employing the Lembert suture the needle must be made to include some fibers of the submucosa; that special care must be exercised in approximating the mesenteric borders of the intestine to include a portion of the mesentery; that there is no danger of cicatricial contraction following end-to-end union of divided intestinal ends; that there is no objection to the placing of secondary sutures in intestinal tissue when for any reason it seems necessary to do so; that the formation of intestinal adhesions can be prevented by leaving behind in the peritoneal cavity a quantity of saline solution when closing the abdominal wound; that ordinarily there is less danger to the patient in closing the abdominal wound after suturing the gut than in leaving the wound open and surrounding the injured parts with gauze packing; that union of the parts under favorable conditions is effected in about sixty hours; that a simple procedure by means of which an intestinal anastomosis can be easily effected, and which is adaptable to all parts of the intestinal tract, requiring in its performance only a few round sewing needles and suture material of either horsehair or silk, is decidedly preferable to methods necessitating the use of specially constructed instruments.

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HYSTERIA, ITS ETIOLOGY AND MANAGEMENT.[1]

BY JOSEPH M. AIKIN, M.D.,
OF OMAHA, NEB.

SINCE the days of earliest thought hysteria has commanded attention by all civilized peoples. The name is an unfortunate one, as it designates a condition found in both sexes, denominated by Moebius as "a state of mind in which ideas control the body and produce morbid changes in its functions." This definition is, I think, the most exact and lucid of any given. During centuries past the disease was thought to be confined to females alone, the old theory being that the womb was the sole cause of the disorder; modern medical research has clearly shown its clinical parallel in the male, though it is more frequent in females. It is most likely to appear between the ages of ten and twenty-five years, but does occur in children of tender years, and may make its first appearance in persons past middle life.

By our definition the mental nature of the person is implicated. The physical body, composed of bone, muscle and nervous tissue, becomes impaired in one or all of these parts. If in the latter, we see failure of proper nerve function either in the sensory or motor realm. Also, since the brain is the supreme controlling center of the nervous system and the seat of mental acts too, we can readily see how a weakened condition of the brain will permit, to a greater or less degree, loss of control. It follows, then, that "hysteria belongs to a group of mental diseases of cerebral insufficiency."

The great French author Charcot said, "Hysteric people are hysterical because they are mental degenerates." The cause may be due to physical or mental influence or both. Of the two, the mental and moral influences are the more potent and the more frequent. The period of transition from girlhood to womanhood and that from the regular monthly periods to their cessation initiate the greater number of cases.

Heredity is an important factor in causing it; but transformations from, or to, other neuroses or psychoses, rather than transmissions of the same disorders, are very common. Certainly all fair-minded persons agree that the nervous structure in the female is more delicately organized than in the male; it of necessity follows, then, that she is more susceptible to physical and mental influences acting to disturb her physiological plane of acting, thinking and speaking.

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[1] Read before the Elkhorn Valley Medical Society, Norfolk, Neb., January 7, 1902.

Injuries, fright, worry, grief, any incident in life's battles, may overbalance the unstable nervous system. The mental activities of great success in business, school work, invention, or social position, often overbalance the person whom, up to this time, we had believed to be of healthy and well fortified nervous strength. Disappointed affection is a cause for hysteria. God created woman for love, home, and motherhood; she best answers the natural desires of her whole self when she bestows her conjugal affection; her nervous and mental systems are exercised to their highest tension in their most delicate structures at such times. Then, let defeat arise and she has not sufficient nerve strength to change her current of thought to another and rational channel. She is like the horse when the driver is unseated, who will, under the excitement of the occasion, make all manner of false and misdirected movements, finally losing the race and wrecking himself unless soon placed under control of his master. Let success crown her efforts, and she is sometimes so elated that her mental control is lost. She had used her entire reserve strength in gaining the goal, and could not make further progress. In either case the nervous and mental systems had been brought to their highest degree of action, and the ability to control beyond that point was wanting.

I have cited these extreme cases to correct a popular but erroneous impression that if an hysterical person only *would*, they *could* wholly control their actions. They can to a certain extent only, just as you or I can suffer bodily pain or endure grief yet continue our duties and the world be none the wiser; if we have the reserve strength in that department of our physical, mental, or spiritual economy, we can do so; otherwise, we fail.

Conditions in society create many hysterics. Restrictions placed upon children, especially girls, preventing fredom of dress and the outdoor romping in the sunshine and fresh air throughout their growing period is but generating nerve force that will find vent through some channel. Depriving young life of its God-given privilege to physical perfection as Nature has ordained, necessarily produces a lack of balance in the physical and mental natures.

Small wonder it is when the girl who has been taught daily from infancy to graduation that her book education is of first consideration should become a dependent nervous wreck. Such girls pass from school to matrimony more imperfectly prepared for their duties as wife and mother than their servants in the kitchen. Education is a miserable failure that neglects to develop the physical equal to, if not in advance of, the mental.

Hysteria is not a disease with known pathological changes caused by germs, like pneumonia, typhoid, scarlet fever, or measles, nor is it a sepsis such as we see resulting from infection in wounds. It is a condition consequent upon a lack of balance between the physical and mental natures. The spoiled child is a most fertile field for an hysterical adult.

In hysteria we have sensory, motor, and mental symptoms. The sensory are marked by oversensitiveness and diminished sensations, the latter predominating. These anesthetic areas are not permanent, and they do not follow the anatomical distribution of a nerve. The loss of sensation may be cutaneous only, or located in the deep tissues. Certain senses, as taste and smell, are often perverted. Hearing and sight, too, are diminished, but seldom lost. It is noticeable that hysterics are not aware of their anesthetic areas. Oversensitiveness is quite common. Neuralgic pains and other sense disorders are complained of, but seldom definitely located; and if located are cited in a new spot an hour later.

Motor symptoms are characteristic. They are retarded—that is, the patient does not react to her mental suggestion for action so quickly as is her normal response. It is closely allied to anesthesia in its retardation. If we can divert the patient's attention from self, we can get more rapid movements. Sometimes a rigidity of the muscles is markedly present. The mental symptoms are impaired memory and will power. The amnesia is due to the want of mental concentration, the outcome of volitional enfeeblement, while the loss of will power is manifested by impulsive acts and general want of self-control; forgetfulness causes contradictory statements and hysterics are accused of deceit; it may, indeed, lead to a suspicion of insanity in some cases. It is charged against hysterics that they simulate for pleasure, but this is not true except in slight degree. The simulation and deceit have their origin in misconceptions and in misconstrued impressions, or from the failure of the impression to reacn the field of consciousness for its application. Convulsive seizures are very much like epilepsy, but hysterics do not hurt themselves by falls or other accidents common to epileptics. Clownish contortions of the body are manifested in extreme cases. During these clownish acts, rage, joy, and other emotions may modify the attacks and attitudes. Smothering attacks like fainting with the eyes rolled back, respiration slowed with the face pale, occur, while the patient sinks down as if dying.

Motor accidents, like paralyses and contractions, occur. The paralyses of hysterics are ushered in suddenly by some emotional disturbance, and they are as quickly vanished when the attention has been diverted. These sudden transitions cause us to assert that the patients can but will not control themselves.

Sensory accidents are sudden headaches and other painful sensations that are of sudden onset and just as quickly pass away. Visceral symptoms are many and varied; the patient suddenly loses her voice or can only speak in a whisper. A laryngeal spasm will sometimes cause suffocation like croup in a child, but patients do not die in these conditions. Suppression of urine will alternate with a profuse discharge of very light-colored urine; changes in the chemical proportions of the urine are common but not constant. A continued remittent or intermittent fever is occasionally found in hysterics; there are recorded cases in which it has arisen to 105 to 110° F., and we may thereby be led to mistaken diagnosis. There are other symptoms to account for the fever if the case be not purely hysterical.

The cause of hysteria is always chronic. Many patients get instant relief under certain mental and moral influences. The diagnosis is not so difficult if we will remember the distinguishing marks from neuresthenia, emotional disturbance and wilfulness on the part of the patient.

Management must be directed mainly to a control of the mental nature of the patient. A careful, systematic and persistent effort in repairing the nervous system is necessary, that stability may be secured and maintained. Treatment must be general for the disease and special as applied to each individual according to his or her characteristics. This can be accomplished only by a painstaking and persistent study of each case. We must analyze and know the potential of physical, mental and spiritual power in the individual; then confidentally apply the material, psychic, or spiritual therapeutics indicated.

Rational medicine sees each person as differing from every other individual, both actually and relatively, in the exercise and control of his three natures. The fact that the clinical picture of many hysterics embraces symptoms from these three natures must, reasoning from effect to cause, lead us to the correction of defects when they exist. So broad is the domain of rational medicine that every "pathy," past, present, or to come, is but the evolution of a grain of truth surrounded by much untruth.

STONE IN THE FEMALE BLADDER.
REPORT OF A CASE.

BY H. H. STONER, M.D.,
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THAT the formation of calculi in the female bladder is of infrequent occurrence will be attested by everyone who has practised medicine or surgery for an extended length of time. Many practitioners have gone through life without having encountered this condition, and the foremost surgeons and gynecologists have only occasionally met with it. The reason of the infrequency of stone in the female bladder is to be found in the shortness and large caliber of female urethra.

The etiological factors which originally contribute to the formation of stone in the male bladder are certainly equally present in the female urinary apparatus. Thus, renal calculi pass from kidney to bladder through the ureters fully as often in women as they do in men, but in the female it does not encounter the same difficulties in making its escape from the bladder as it does in the male. In the former case the distance to be traversed by the stone does not exceed two inches through a straight canal, the diameter of which is nearly three-eighths of an inch; in the latter case such a stone must pass through a tortuous route, eight or nine inches in extent, with a caliber of scarcely one-fourth of an inch. It should excite no wonder, then, that vesical calculi are found much more frequently in the male subject. Stones the nuclei of which are composed of inspissated mucus form as often, no doubt, in the female bladder as in that of the male, but for the reasons already ascribed they more readily make their exist unknown to the host. If the same difficulties were opposed to the escape of vesical calculi in the female as in the male urethra, we should as often find them in women as in men, but such is not ordinarily the case.

In nearly all the recorded cases of calculi in the female bladder the cause has been assignable to foreign substances introduced from without, such as hair-pins, pencils, catheters, crochet-hooks, chewing-gum—in fact, anything small enough to slip into the urethra. These constitute the nucleus around which the salts of the urine are deposited and the formation of a stone becomes possible. Kelly reports having twice operated for stone in the female bladder which was occasioned by the deposit of urinary salts around a suture left *in situ* after the closure of a vesicovaginal fistula. The symptoms of stone in the female bladder do not differ materially from the same condition as it affects the male bladder. There are the same paroxysmal vesical tenesmus, frequent urination, and symptoms of severe cystitis. Under ordinary circumstances sounding the female bladder offers no difficulties, and the detection of the stone by this means is easily accomplished.

There is but one way in which relief from this condition can be effected, and that is the removal of the offending calculus. Three methods offer themselves, *viz.*, litholapaxy, suprapubic cystotomy, and cystovaginal incision. In making a selection from these operative procedures in a given case, one must be governed by the particular factors which go to make it up. To remove even a small stone through the urethra without first crushing it is poor surgery, for the damage to the mucous membrane likely to be sustained in dragging a jagged-edged stone through the urethra is likely to be greater than would be either of the cutting operations. In cases in which the urethra can be sufficiently dilated to admit easily a lithotrite, and if the operator be sufficiently adept in its manipulation, litholapaxy is probably the ideal operation. There is this disadvantage in this procedure, however, that unless one be skilled in handling the instrument one is liable to include a portion of the mucous membrane of the bladder in the grip of the lithrotrite and thereby do much damage. Moreover, one can never be absolutely certain that every particle of calculus has been removed. If for these, or any other reason the crushing operation be not chosen, recourse must be had to either suprapubic or vaginal cystotomy. For a very large stone, the suprapubic route should be taken, as this offers practically an unlimited amount of room through which to extract the calculus. The technic here does not differ from that for the same operation in the male. The removal of stones of one inch or less in diameter, if not done by litholapaxy, is best effected by means of vaginal cystotomy. The incision should be begun just in front of the cervix and carried a sufficient distance forward to permit of easy extraction of the calculus. Whether or not the incision shall be closed will depend altogether upon the degree of inflammation present. If the bladder be highly inflamed, the incision should be left open to permit of continuous drainage for a few weeks. Usually after four or five weeks' time it will close of its own accord, by which time the inflammatory condition will have subsided. If there be not a high degree of inflammation, the incision had better be closed with silkworm gut or silk sutures, passed through the mucous membrane of the vagina only and not less than one-fourth of an inch apart. A catheter should be placed in the bladder and allowed to remain about six days, when it can be removed, at which time the line of incision will be found strong enough to stand any ordinary strain. The bladder should now be emptied every two or three hours until the sutures are removed, which should not be earlier than the twelfth day.

The interest in the case which I am about to report centers about the etiological factors which produced the calculi, and the conditions which permitted of but one course of procedure for their removal.

Mrs. S. H. H., sixty-five years old, rather corpulent and a chronic asthmatic, consulted me in June, 1901, for an inveterate cystitis of two years' standing. Excessive tenderness of the genital organs and a sense of false modesty forbade more than a cursory examination at this time. As the urine was decidedly alkaline, I prescribed for this condition without promising any success. She returned on November 28, 1901, with a history of having obtained only temporary relief from the treatment prescribed. She was now willing to submit to any form of examination I might exact. She had at this time lost practically all control of the vesical sphincter, and was forced to urinate every few minutes, which act was accompanied by excruciating pain. She was indeed in a pitiable plight. Examination revealed a large ventral hernia in the median line about two inches above the pubic bone, the opening in the abdominal wall being about one and one-half inches in diameter. There was a complete rupture of the perineum involving the sphincter ani muscles; the uterus was completely prolapsed, hanging outside the vagina; on the anterior vaginal wall was a cicatrix which marked the site of a previous slough. Upon attempting to pass an ordinary No. 12 (English) metallic catheter, a stricture was encountered just within the meatus which prevented its farther passage, and a smaller size was tried with no better success. At last, with a small uterine sound and after the exercise of much patience, I succeeeded in sounding the interior of the bladder. I could now plainly feel the unmistakable grate of a vesical calculus. Upon being informed that the only hope of relief lay in the extraction of the stone, the patient readily consented to operation. In this case there was no choice of operative procedure; the only alternative was to do a vaginal cystotomy. The ventral hernia precluded the possibility of doing the suprapubic operation, and the stricture of the urethra was of such extent as to prevent its dilatation to a caliber sufficient to admit a lithotrite. I was, therefore, driven to the vaginal operation. On December 3, 1901, under chloroform anesthesia, skilfully administered by Dr. W. H. Lane of Miller, S. D., I did a vaginal cystotomy. After vainly endeavoring to introduce a No. 8 (English) sound as a guide upon which to cut, I was compelled to resort to the uterine sound already mentioned. After having introduced this instrument into the bladder, I made a vesicovaginal incision about one and one-half inches in length, through which I removed three calculi, aggregating in weight six drams, the largest weighing two and one-half drams. After thorough irrigation of the bladder through the wound, and when the oozing had completely ceased, I closed the incision with silkwormgut sutures. I would insist upon the cessation of all oozing prior to the closure of the incision, as otherwise, clots of blood within the vesical cavity may produce so great vesical tenesmus as to compromise seriously the holding of the sutures. A No. 4 (English) metallic catheter was tied into the bladder and was left *in situ* six days. A soft rubber catheter would have been used, but for my inability to introduce it through the strictured portion of the urethra which extended fully one-half its length. The bladder was daily irrigated with boric-acid solution while the catheter remained in position. At the end of twelve days the sutures were removed and union was found to be complete. At the time of her discharge, two weeks later, the patient was urinating naturally about every two hours during the day and somewhat more frequently during the night. I shall as soon as she has recovered her former health, begin a systematic dilatation of her urethra.

The principal cause which contributed to the formation of the calculi in this case was undoubtedly the strictured condition of the urethra. This must have occurred in consequence of the terrific injury she sustained many years ago during childbirth. The cicatrix incident to the sloughing process which included the urethra so narrowed this canal that a calculus sufficiently small to traverse the ureter could not pass out through the urethra. Such a condition could hardly have eventuated otherwise than in the formation of a vesical calculus.

Sanatorium Burned.—Dr. Heron's sanatorium at Lakewood, N. J., was destroyed by fire on June 10th. The uninsured loss is estimated at fifteen thousand dollars.

MEDICAL PROGRESS.

MEDICINE.

Tetany in an Adult.—The statistics collected by Gowers and others show that tetany is more common in males than in females, is most frequent during the first two decades of life, and is very rare after the fortieth year. The disease is relatively infrequent in America, but Griffith was able in 1894 to collect 72 cases in the United States. A case is now reported by E. A. LOCKE (Boston Med. & Surg. Jour., May 8, 1902) which is of especial interest because of the presence of polyuria and albuminuria during the attack. The patient first noticed occasional cramps in the hands and forearms, with sensations of tingling and numbness, but without malaise, headache, nausea or vomiting. One day severe cramps were felt in the hands, which were holding a hammer at the time and could not be released. The cramps then attacked the muscles of the loins, and finally those of the legs and feet. The patient felt agonized, dazed and stupid; the affected muscles were hard, board-like and slightly tender. Various sets of muscles were involved either simultaneously or successively, each spasm lasting from a few seconds to ten minutes. Hot applications could be borne without pain, indicating a moderate degree of anesthesia. Applications of hot cloths and vigorous massage gave much relief after three-quarters of an hour. Second and third attacks occurred after intervals of three and four years respectively. During an attack the head was drawn to the left, fingers adducted, wrists flexed, forearms flexed and internally rotated, arms adducted and held firmly across the chest; thighs, legs and feet flexed, toes extended and abducted. There was tonic contraction of the muscles; no fibrillary twitching. Trousseau's sign (spasms induced by pressure on large nerve-trunks) showed strikingly. All commonly recognized causes were lacking, *i.e.*, gastro-intestinal disturbances, removal of thyroid, pregnancy, acute fevers, toxic conditions, epilepsy. The patient was accustomed to hard muscular work, suffered exposure to rapid changes of temperature, and was addicted to alcohol.

A Method of Investigating the Gastric Function.—In determinating disturbances of gastric function clinicians have heretofore been content to diagnose conditions of hypersecretion and hyposecretion and of increase or diminution of motility. This simple classification of cases does not suffice, according to SAHLI (Berl. klin. Woch., Apl. 28, 1902). The tendency to ascribe all cases of hypersecretion and hyperacidity to disturbances in motility or even to obstruction of the pylorus is dangerous, since it frequently has led to the recommendation of gastro-enterostomy when the latter was not at all indicated. Sahli has devised a method for the more accurate and searching examination of states of gastric function, by means of which he has been able clinically to differentiate the following groups of cases: (*a*) Cases with good motility: (1) Hypersecretion, hyperacidity and hypermotility; (2) hypersecretion, hypacidity and normal motility; (3) normal quantity of secretion with hypacidity and hypermotility; (4) hyposecretion, hyperacidity, normal motility; (5) hyposecretion, hypacidity with normal or increased motility; (*b*) Cases with lessened motility; (6) Hypacidity, hyposecretion, diminished motility; (7) anacidity, hypersecretion and diminished motility. The therapeutic procedures following such searching diagnosis as these can be directed far more intelligently than was possible under the broader and less accurate diagnoses which have hitherto been accepted as satisfactory. It can be ascertained clearly whether efforts to influence motility are desirable and how far they succeed when tried; the indications for and effects on secretion of belladonna preparations, alkalies, etc., can be observed, and valuable use can be made of beef-extracts, bitters, etc., for directly or indirectly influencing the secretion of the stomach.

Tetanus following Vaccinia.—The interest which this subject has lately aroused is clearly considered in a very complete and exhaustive paper by R. N. WILSON (Jour. Am. Med. Assoc., May 10, 1902). From a study of 52 authenticated cases of tetanus following vaccination he advances the following conclusions: Infection took place in most, if not all cases at the site of the vaccination. The grouping of a large number of cases in a certain locality, and following the use of a certain production of vaccine virus, would tend at first sight to speak for a primary infection carried in with, or by means of, the virus into the system. One finds, however, that a secondary infection is indicated by the otherwise discordant chronic incubation period and acute symptoms, by the almost uniformly fatal termination, by the severity of the course of the disease, by the millions of normal vaccinations with the same virus, by the simultaneous deaths from tetanus known to be due to other causes, by the diminution in the number of such cases at the present time as more continued aseptic care is generally exercised, by the fact that in every case in which particulars are known overabundant opportunity was offered for such secondary infection, and, finally and most important, by the absolute failure of all bacteriological and inoculation experiments on the lower animals and man to indicate the presence of the tetanus bacillus or its toxins in the virus. It would seem that the glycerinated virus, as well as the vicious influence of the shield, was disposed to present a more extensive ulcerative surface and a greater tendency to sloughing than the dried virus or the arm-to-arm method. The latter is impossible at the present day and it may become necessary to find a substitute for the glycerin or to use the dry point. The author thinks that there is an individual susceptibility and that the tetanus spores or germs must frequently be present on the skin. He urges the same care for the vaccine wound as for an abdominal incision, and thinks that tetanus after vaccination appears no more inevitable than hemorrhage after the tying of an artery. That vaccine virus could be infected with tetanus no one will deny, but that it has been in the cases reported deserves the full denial that can be given by clinical symptoms and careful scientific study.

Hay-fever.—There are three factors in the etiology of hay-fever, according to A. THOST (Münch. med. Woch., Apr. 29 and May 6, 1902), namely, an extrinsic exciting agent, a local disposition in the mucous membrane of the nose or of the upper respiratory tract, and a general disposition dependent upon a peculiar irritability of the nervous system. In over 400 cases analyzed, the exciting agents proved a great variety of odoriferous flowers, pollen, dust, and many different smells, while in a few such conditions as heat, dry air, change of temperature, mental or bodily fatigue, excess or abstinence from alcohol, were sufficient to induce an attack. Strangely enough, the disease affected people from the same locality at the same time of the year; slight differences occurred only in large cities. The close relation of hay-fever with the flowering of plants is seen in the fact that it is unknown in high altitudes and islands with sparse vegetation, in humid tropical regions and in the north. An examination of the nasal mucus showed only rarely the presence of pollen; this, together with the fact that many predisposed people can snuff pollen directly without harm, makes it seem impossible that the attacks really depend upon this, especially since often the odor alone is sufficient. By bcateriological examination of the nose a white staphylococcus could be obtained in almost all cases, but experiments showed that this alone could not bring about an attack. Then, again, it seems likely that the various odors alone, purely by their stimulating effect on the nerves, are to be held responsible. The local disease of the nose is generally swelling and edema of the inferior turbinated region, which not only leave the mucous membrane in a more irritable condition but also force the patient to breathe through the upper part of the nose where the olfactory nerve ramifies. More serious lesions, such as old purulent catarrhs, deviated septa, etc., are but rarely encountered. The general disposition to the disease shows itself in the type of patients most frequently affected; these are often mentally active, nervous individuals of the more educated class, and not rarely some previous disease has weakened them and so increased their idiosyncrasy. In England it seems that many have suffered from gout and the epidemics of influenza of recent years have contributed much to increase the frequency. The symptoms of hay-fever are so pronounced that the diagnosis is easy. The first sign invariably is an irritation of the nose and eyes; following this the ears and the deeper parts of the respiratory tract become involved. With advanced age the disposition seems to decrease and serious results never follow; indeed, there seems to be a certain antagonism toward tuberculosis. The disease can be relieved and even cured, although a specific does not exist. A large number of patients were benefited by local applications of cocaine, eucain, menthol and formin, and lanolin seems to be especially soothing. Light massage of the nose and adjacent regions and the inhalation of a number of aromatic drugs are followed by relief, as is also the application of trichloracetic acid and the galvanocautery. It is important that such local treatment be not carried out at the beginning of the attack. Of internal remedies, the bromides, codeine, morphine and chloral were employed, and in a few cases belladonna and valerian. Good and bad results were seen in an equal number after quinine; a little more satisfactory were the iodides except in those instances in which they themselves caused a coryza. Atrabilin, a suprarenal preparation, had no effect. The best remedy in all cases proved to be a change of climate during the critical period.

Diagnosis of Pleural Effusions.—It is well known that it is sometimes impossible to diagnose pleurisy with effusion by means of physical signs, which fact goes to show that methods for examining the chest are not yet perfected. The percussion of Traube's semilunar space gives valuable assistance for the left anterior parts, since here fluid will sink below the normal limits of the lung and will cover the normal stomach tympany. A. VON KORANY (Wien. klin. Rundsch., Apr. 20, 1902) thinks that by means of auscultatory percussion fluid situated elsewhere may be readily detected. He places the index finger of the left hand perpendicularly with its tip against the surface of the body and percusses against its flexed second joint with the extended index finger of the right hand. A sudden change in intensity and character of the sound will always be noticed on percussion when the organ over which the stethoscope is placed is no longer parietally situated, and the same holds true for collections of fluid. The determination of the lower limit is of most importance, since in effusion this follows the course of the pleural sinus, while in the case of dulness due to the lung this never reaches down into the complementary spaces of the pleura.

Blood-pressure in Chronic Nephritis.—By means of Gärtner's tonometer, E. VON CZYHLARZ (Wein. klin. Rundsch., Apr. 20, 1902) tested the blood-pressure in a number of cases of chronic nephritis. He found that in many there was an undoubted lowering of arterial tension when rest was enjoyed and the usual restrictions of diet were adhered to. This phenomenon was not accompanied by any symptoms referable to heart-weakness, so that it must be looked upon as a relative improvement. At the same time the disappearance of subjective symptoms, such as headache and vertigo, shows that they are dependent upon the increased arterial tension.

Pancreas and Diabetes.—An interesting contribution to the relationship between diabetes and lesions of the pancreas is given by J. TESCHEMACHER (Münch. med. Woch., Apr. 22, 1902). The patient had sustained a severe trauma which could be brought into etiological connection with a very slowly-developing cyst of the pancreas, for which he was operated on eight years later. At that time polyuria with albumin, but no sugar, in the urine could be determined. Eight years later he again presented himself for treatment, again suffering from a decided glycosuria with its symptoms. The tumor did not recur. No doubt the trauma had started an interstitial process, very slowly progressive, which finally, however, caused so much destruction of tissue that sugar appeared in the urine.

Painful Areas in Cholelithiasis.—There are three distinct areas in which pain exists or in which tenderness may be elicited in cholelithiasis or its complications, according to S. BOAS (Münch. med. Woch., Apr. 15, 1902), namely, the hepatic edge of the gall-bladder region, the subcostal part of the liver and the dorsal surface. The hepatic free border may be painful *in toto* or more particularly in the neighborhood of the gall-bladder, or the latter alone may be tender. In the great majority of acute cases of cholelithiasis the entire edge is painful to touch, while in the free intervals the pain is more localized at its point of origin. It is also in the acute attack that the subcostal surface is most often found sensitive, sometimes in its entirety, sometimes only in its lower portions. Finally, the dorsal area may be found tender at the level of the two lower dorsal and the upper lumbar vertebræ from 2 cm. to the right of the vertebral column to within the posterior axillary line. Careful palpation must be practised and when the tenderness is equally marked on both sides or higher up or lower down, no diagnostic value should be attached to it so far as gall-stones are concerned. The importance of the dorsal tenderness lies in the fact that it is often present long after the acute attack, and in latent cases or in cases without icterus, in which the diagnosis otherwise would be difficult. An excellent method to test the degree of tenderness of the various areas is by means of electrodes. In conclusion, the author mentions various conditions which frequently resemble gall-stone colic; these are ulcer of the duodenum, enteroptosis with displaced right kidney, hyperchlorhydria, and intestinal neurosis.

Transmission of Tuberculosis.—There are three possible ways in which a person may become tuberculous, namely, by heredity, through the milk of tuberculous cows, and by inhalation of infected sputum. Though experimentally proven, little importance is to be attached to the transmission from parent to offspring; as evidence of this may be cited the several thousand guinea-pigs kept in the Pathological Institute of Kiel, which are all healthy though they sprang from animals which were experimentally rendered tuberculous. A. HELLER (Münch. med. Woch., Apr. 15, 1902) takes exception to the recent statement of Koch that human and bovine tuberculosis are not closely allied, for he has found a large percentage of intestinal tuberculosis in children fed upon cow's milk and cites an interesting case in which an attempt was made to eradicate tattoo-marks by means of injections of milk and in which subsequently lupus developed over the areas so treated.

SURGERY.

Leucocytosis in Suppuration.—The value of the white-cell count in suppurating processes, especially in cases of appendicular abscess, has been recently emphasized. M. WASSERMAN (Münch. med. Woch., Apr. 29 and May 6, 1902) observed cases with favorable outcome which were not operated on and in which, in spite of apparently severe clinical symptoms, the leucocytes were generally increased temporarily or throughout the course, but were always below 25,000. In a small number an abscess existed without marked leucocytosis; these, however, formed the exception, for in the great majority, when pus was present and an operation indicated, 25,000 was reached and exceeded even when the temperature and pulse were low and the general condition was good. The great value of the blood-examination thus is evident and it, with the temperature and pulse, forms a triad of symptoms essential for the diagnosis of appendicular abscess. The author continued his researches in a number of other conditions; thus, in a case of purulent peritonitis, he found 37,800 leucocytes; in one of ileus following chronic peritonitis, 20,000; while in several patients in whom intestinal obstruction was not due to inflammatory adhesions normal values existed. In strangulated hernia the number of leucocytes was either normal or only slightly increased; in abdominal wounds with hemorrhage there appeared a transient increase. It seems from these cases that peritoneal irritation not depending upon infection is also capable of causing a moderate leucocytosis; this is also evident from the counts made after the removal of the appendix in interval cases. The reactive power of the peritoneum to infection is much greater than that of other parts of the body, for in a great variety of abscesses less than 25,000 leucocytes were always found in the blood and the normal was rapidly reached when free drainage was provided. If, however, the abscesses no longer remain localized and bacteria appear in the blood, the leucocytosis becomes more pronounced; this is also true in erysipelas. Great care must be exercised not to mistake the leucocytosis resulting from other causes, such as cachexia, for that dependent upon pus-formation. No distinct relation between the different pyogenic bacteria and the degree of leucocytosis could be determined.

THERAPEUTIC HINTS.

Suprarenal in Pruritus.—Two cases are reported by F. S. MEARA (Merck's Archives, May, 1902). The first was that of a girl of eighteen who, seized with violent itching of the anus and vulva, rubbed and scratched the parts into a condition of marked hyperemia. A strong solution of suprarenal blanched the parts and stopped the itching for fourteen hours, when a fresh application was made. The parts were dried and puckered but this was overcome by boric-acid ointment, and two months later the itching had not recurred. The second case was that of a married woman in whom the relief was equally prompt, though the treatment had to be repeated some weeks after.

Antitoxin in Conjunctival Diphtheria.—The patient, six months old, had a very adherent, thick, yellowish-gray patch of pseudomembrane on the upper eyelid, moderate prostration and a temperature of 102° F. Smear and culture showed diphtheria bacilli, and 2,400 units of antitoxin were administered. Ice compresses were applied and atropin dropped into the eye. In twenty-four hours the swelling of the eye had much subsided and the temperature had dropped to 100° F., and on the third day the membrane was nearly gone, though it did not disappear entirely until the sixth day. The eye was completely well by the tenth day. Under treatment without antitoxin these cases generally result in destruction of the eye.—L. E. HOLT, in Archives of Pediatrics, May, 1902.

Whooping-cough.—

℞ Tinct. droseræ
Tinct. grindeliæ..............aa gtt. xv
Tinct. belladonnæ
Tinct. aconiti................aa gtt. x
Syrupi .... 20 c.c (ʒv)
Aqua tiliæ..............100 c.c (℥iij ʒij)

M. Sig.: One dessertspoonful every two hours.—Le Progrès Médical, Apr. 5, 1902.

Fetid Bronchitis.—

℞ Ac. tannici..................0.05 (gr. i)
Terpini hydrat..............0.10 (gr. ij)
Sod. benzoat................0.15 (gr. iij)

Place in one cachet. Sig.: One three or four times a day.—Le Progrès Médical, Apr. 5, 1902.

Pyloric Stenosis in Infants.—Medicinal and dietetic measures should always be first employed. The indications are as follows: (1) To overcome the violent pyloric contraction, such drugs as belladonna, bromides and chloral opiates should not be given, as they impair the motor function of the stomach. (2) To treat the secondary gastric irritation. The retained food should be washed out and the stomach rested by rectal feeding for one or more days. When food is again given by mouth, the stomach should be washed out occasionally to remove a possible residuum of undigested food. (3) The diet should consist of food which forms no coagulum in the stomach. Whey, peptonized milk or a mixture of these is good. Cod-liver oil will supply fat and cream may be gradually added. After nursing lay the infant on its right side. Small quantities of food should be given in order to prevent gastric dilatation. These measures failing, resort must be had to surgery.—E. W. SAUNDERS, in Archives of Pediatrics, Apr., 1902.

Nervous Insomnia.—

℞ Camphor monobrom.........0.12 (gr. ij)
Ext. cannabis indicæ
Ext. hyoscyami...........aa 0.02 (gr. ⅓)

Ft. pil. No. i. Two to five pills a day.—DEBOVE and GOURI, in Le Progrès Médical, Mch. 29, 1902.

Infantile Scorbutus.—An infant of nine and one-half months, fed partly on artificial food and partly at the breast, became pale, thin, cachectic; there were abundant sweating and constipation. A search revealed a subperiosteal hematoma of the femur and swelling of the gums with ecchymoses. COMBY (Le Progrès Médical, Mch. 29, 1902) changed the feeding to fresh boiled milk with the addition of three teaspoonfuls of raisin-juice a day. In a week there was noticeable improvement, and at the end of a month cure was complete. Dalché uses purée of potato, straight milk and lemon-juice for scurvy in infants over a year old.

Thyroidin and Optic Neuritis.—In four women and one man, COPPEZ (Le Progrès Médical, Mch. 22, 1902) has noted the development of an amblyopia following the use of thyroidin for obesity. The symptoms appeared only after a long period of medication, and ceased some time after the thyroidin was stopped. A dog under similar treatment for obesity became almost blind. From the clinical picture the author attributes the amblyopia to a partial retrobulbar cystic neuritis. It is interesting to note that all the patients rapidly lost their fat.

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Subscription Price, including postage in U. S. and Canada

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SATURDAY, JUNE 14, 1902.

THE AMERICAN MEDICAL ASSOCIATION.

THE scientific proceedings of the fifty-third annual session of the American Medical Association will be found very fully reported in the columns of the present issue of THE NEWS.

This year's meeting was especially noteworthy for the high character and practical value of the scientific contributions to the program. A glance at the abstracts of the papers read and their discussion will very soon show this to be no idle compliment but merited praise. There was not a single section which did not have for discussion some important practical questions that are almost constantly before the general practitioner for solution. The outgoing officers of the Sections certainly deserve the greatest possible credit. They have set a standard that will be an incitement to emulation, while at the same time marking the high-water-mark of achievement.

Dr. Dock's contribution on the first day to the Section on the Practice of Medicine will be a landmark in the American study of animal parasites of human beings. The discovery of amebæ causing dysentery in a patient who had never been outside the State of Michigan and who had not been in contact with soldiers returned from campaigns in Cuba, Porto Rico, or the Philippines, shows that these parasites are probably pathogenic over most of the United States. Certainly the climate of Michigan does not present any features that would encourage the survival of a presumedly tropical parasite, so that it seems that amebæ may live and prove actively causative of intestinal conditions anywhere in the temperate zone. It is not improbable that many of the supposedly simple dysenteries observed in various parts of the Northern States are really due to amebæ. We published recently in THE MEDICAL NEWS an account of five cases of liver abscess in which the active pathogenic agent was the ameba. None of the patients had been in the tropics. In the discussion of Dr. Dock's paper an additional series of cases of amebic abscess of the liver was reported, all the patients having a history of prolonged continuous residence outside of the tropics. It is evident then that the amebæ as a pathogenic agent must be assumed to be endemic in the temperate zone and suspicious cases should be carefully studied with this idea in mind.

The symposium on chronic nephritis in the same Section brought together many very practical thoughts and suggestions.

In the Section on Surgery, besides discussions of biliary and pancreatic surgery, the ever-renewed subject of appendicitis received due consideration. In the Medical Section one of the most conservative of medical clinicians announced his conclusion that, whenever there is assurance that appendicitis is really present, operation should be advised. The only indication for medical care is to carry the patient over from the acute stage to a subsidence of the symptoms that makes the condition more favorable for operation. It is evident that physicians and surgeons are at last drawing together on this much discussed subject.

The Section on Children's Diseases discussed especially the timely subject of milk and infant feeding in a way that will make the report of the sessions of current interest.

The social features of this meeting were well calculated to furnish very pleasant relaxation for those in attendance. The number of members registered this year was not as large as for several years past, but the lack in numbers was compensated for by the interest evinced by all. Rarely have Section meetings been so faithfully attended.

It is understood that the question of medical reconciliation in New York has taken on a very favorable aspect. The character of the committee which has in charge the reconstruction of the code of ethics of the American Medical Association is a guarantee that there will be nothing to prevent harmony on this score after amendments are effected.

In a word, this year's meeting of the National Association has proven to be another step forward in scientific work and in professional organization.

MEDICAL NEWS OF THE NAVY.

In a recent bill before Congress the Navy Department has asked for an increase of twenty-five officers in its medical staff. This is a step in the right direction. According to its own statement, the lives and health of the officers and men are too important to be trusted to the incompetent, and the rapid increase in the size of both the Army and Navy has rendered the previous force totally inadequate to meet the present requirements.

In the Army this condition in the past was met by the appointment of what were known as "contract-surgeons," and this was practicable in the Army from the fact that as the demand for their services occurred on shore and within the limits of the United States, it was possible to find competent men. Such is not the case in the Navy, as these conditions do not exist, and the number of ships in commission has increased so largely that it is now imperative that a corresponding increase should be made in the Medical Corps.

It was also demonstrated that for various reasons the contract system in the Army was not a good one, and it was therefore abandoned. This was also an easier thing to accomplish there than it would have been in the sister branch of the service, inasmuch as the younger medical men seeking government appointments have, up to within a few years, preferred the Army, so that the list has been kept recruited up to its full number, while the Naval register has been punctuated with gaps of varying dimensions. This was due to many causes, principally, it seems, to the fact that in the Army the bugbear "rank" was positive, while in the Navy it was relative, and the junior medical men messed and were thrown with officers much more junior than themselves. They lived, in fact, in the steerage in their earlier days, and it was only during the incumbency of the preceding Surgeon-General—Dr. Van Reypen—that a bill was introduced and carried by him through Congress, giving them actual rank, with quarters in the ward room. From that time the applications were much more frequent, until at the present writing there are only two vacancies outside of the proposed enlargement of the staff, and these are due, not to a want of zealous young aspirants, nor to a lack even of proper professional qualifications on their part, but, as it seems, to an inability to pass the physical examination. This, however, is not severe. It does not require the active presence of unusual strength, but rather the passive absence of any weakness or debilitating disease. Certainly it is not more than the candidate would undergo for life insurance with the exception, perhaps, of the eyes and special senses, but even there the requirements are less than they are for the line. The professional examination is thorough, but not unnecessarily so. They do not regard or require a diploma, considering that their own examination will be all that is necessary and that if the applicant succeed in passing that he is duly qualified, as he undoubtedly is.

As to the pay, rank and emoluments of the two services, they are identical, with the exception that the Naval surgeon is docked fifteen per cent. while on shore duty, his sea pay corresponding to that of his Army confrère at all times. Why this should be it is difficult to understand. At sea his expenses are much less, his quarters are provided for him, his mess bill is much below what he could obtain suitable food for on shore, he wears his uniform constantly, and he can, if he desires, by giving up the pleasure of too frequent "going ashore," reduce his total expenses far below what it would cost him to live in any other way. And yet it is just here that the wisdom of some of the bureau officers of the past has decreed that he shall have more pay than when the demands of departmental service require quarters in cities and in hotels that he is forced to find for himself. The only possible explanation is that as many men prefer shore duty it is thrown to them as a sop for accepting an unwelcome billet, which the department has the perfect power of enforcing by orders and the liability of which was known to the surgeon when he entered the service—a remnant of the old days when a man's influence to have his orders changed was greater than the power that issued them.

If, however, a man does not care for sea life the Army is also open to him, and surely there is much to recommend the service to young graduates. Very few of them can earn eighteen hundred dollars a year, and that, too, only with the trouble of uncertainty of collection, for medicine is as long as art, even if the time is not so fleeting, and he is spared the weary hours of waiting and disappointment that are so common as to have become proverbial. On the other hand, he has time to devote himself to any special subject that he cares to pursue, and also the ability to lay by enough to start him later in his chosen career. He sees the world and gains in experience without any expense or trouble to himself. He can also realize that the longer he remains in the service the higher will be his pay, and not only will he be spared the trials of competition, but that, should he elect to retain his position, he can retire in his old age with a feeling of perfect security against want. Let him remember, however, that he is a *doctor* and not a sailor, nor a soldier, and his path will be all the easier. Let him bear in mind that his path and course of action are distinct, for, while the academies can turn out graduates competent to take command of fleets and armies and act as engineers and paymasters, they can not and do not make surgeons.

Medicine is an honorable estate, but if the Naval surgeon does not respect it himself no one else will; the question of precedence in entering a boat or forming in a ceremonious procession has nothing to do with his professional standing, for had he desired other titles and rank it would have been better for him to have entered the service directly in the line. This is all the more marked, because it is a poor enough rule not to work both ways. We do hear, and to our shame be it said, of doctors who insist on being addressed as Commander and Major, but we have yet to find a midshipman or second lieutenant who desires to be called doctor, not because he thinks himself superior, but because his *esprit de corps* has taught him that the customary designations of his own profession are sufficient. Naturally he resents the infraction of this in others, as in fact does the world at large, so that it will be well for the youthful surgeon entering into the tent or the ward room never to lose sight of the fact that he is a doctor, pure and simple, that medicine is his first and only duty, that as he regards his position so will those whom he meets, and also that on the latter depends much of his daily comfort and ease, otherwise he will soon realize that he is alone among many, somewhat more learned than clever. "*Doctior quam sapientior,*" a little more of a doctor than a wise man.

TETANUS AND VACCINATION.

It has been justly feared that the unusually large number of cases of tetanus following vaccination in the United States during the year 1901 might form the basis of future attacks upon both public and private vaccination. Hence those who are interested in preventive medicine welcome every effort to establish the cause of what has threatened to become a widespread and serious complication of a simple prophylactic measure.

Huddleston not long ago reported the finding of tetanus bacilli in the feces of 8 per cent. of the calves in the vaccine laboratory of the Health Department of New York City. It is from some such source as this, according to Jos. McFarland (*Jour. of Med. Research*, May, 1902), that the infection of vaccination wounds proceeds. While the reported cases of tetanus infection have occurred chiefly in the Eastern part of the United States and Canada, they have nothing to do with atmospheric, telluric or seasonal conditions, and the future avoidance of the complication is to be attained by greater care in the preparation of the vaccine virus.

The period of incubation in traumatic tetanus is ordinarily from seven to nine days, while in cases following vaccination the period of incubation averages twenty-two days. Here is a weak point in the argument for contaminated vaccine virus; the figures certainly suggest that a secondary infection takes place which is independent of the material introduced at the time of vaccination. McFarland, however, believes that the tetanus bacillus is engrafted into the skin at the time of vaccination, but fails to find conditions suitable for its growth until the development of the vaccination lesion paves the way by local destruction of tissue.

The weakest part of this writer's exceedingly interesting statistical analysis is that which deals with the relationship of tetanus infection to particular brands of virus. Authentic cases have apparently occurred in small numbers after the use of various viruses, but a large proportion after the use of a particular virus. Without knowing how much of the product of various manufacturers was used during the period covered by the investigation, it is manifestly absurd to draw inferences favorable to one manufacturer or detrimental to another. The learned professor should have called into consultation a business expert before elaborating a statistical argument, the whole value of which depends upon accuracy of the assumption that various makers of vaccine "probably do an equal amount of business."

With the main contention of McFarland's paper, that it is unusual for many tetanus germs to be implanted at the time of vaccination, but that such implantations can and do occur, we are inclined to agree. It is worthy of note that when McFarland's paper was written he was compelled to concede that no one had yet succeeded in finding tetanus germs in vaccine virus. This discovery has since been made by R. W. Wilson and was communicated to the Philadelphia County Medical Society on April 23, 1902.

THE SURGICAL TREATMENT OF EXOPHTHALMIC GOITER.

Graves' disease is characterized by signs so marked that any one of average intelligence can form a very positive opinion whether a given case has or has not improved. In the tremor, the cough, the diarrhea, the dyspnea, the strumitis, the tachycardia, in the very lines of boundless horror and fright portrayed in the face by the exophthalmos there is little or none of the psychical; all the symptoms are distinctly physiological and material.

Those which appeal to us most directly, the facial, are happily serviceable as indicators of their fellow symptoms; we are able, then, by a series of photographs, to form an absolutely trustworthy concept of the result of treatment in a given case. When we are shown such a series presenting in beautiful truth and simplicity the wonderful results of operative intervention in a long list of cases, we are justified in pausing to consider some points in the technic of the surgical cure of this obstinate affection. In spite of the fact that the theory upon which the operation is founded finds little favor at the present day, Jonnesco of Bucharest (*Archiv für klinische Chirurgie,* April, 1902) has published a final paper which goes far, according to his presentation, to show that excision of the cervical sympathetic, with the upper, middle and lower ganglia, never kills, and cures in a large percentage of cases.

Happily the operation presents no particular difficulty; any surgeon of average skill can carry it out. The incision is long; it passes from the mastoid down the posterior aspect of the sternomastoid to the clavicle. The spinal accessory nerve is protected from injury, the omohyoid retracted or divided and the sympathetic found immediately below this, either posterior to or within the carotid sheath. The inferior ganglion is the most troublesome to find; it lies between the scalenus posticus and the vertebræ, upon the neck of the first rib; in order to find it easily it is necessary to separate the clavicular portion of the sternomastoid from the clavicle. This operation is done on both sides, all traces of the system being removed.

Partial thyroidectomy is the only procedure which in any way rivals sympathectomy. How little justification there is for the first can be seen by the fact that its mortality is 13 per cent.; its cures but 30 per cent. Sympathectomy has no mortality and it cures, says Jonnesco, 58.9 per cent. of all cases.

In fine, this paper from Bucharest forces upon one certain definite conclusions. Whatever the pathogenesis of exophthalmic goiter, be it the outcome of a neurosis, of a lesion, of compression, or of an intoxication, we would seem to have in Jonnesco's operation a reliable medium for relief and permanent cure. The less radical operations of simple separation and stretching the cervical sympathetic will be abandoned for one which is shrouded in no greater difficulty or graver danger. Albeit it may not remove the cause, it abrogates the symptoms, which, after all, is the grand ultimate end of all therapeutic strife.

ECHOES AND NEWS.

NEW YORK.

Rockefeller Fellowship for Dr. Richards.—Dr. A. N. Richards, Assistant in the Department of Physiological Chemistry at the College of Physicians and Surgeons, has been appointed to a research fellowship in the Rockefeller Institute for his recent investigations in the field of physiological chemistry.

Summer Expenses.—An appropriation of $25,000 was made last week to the Health Department of New York City for expenses during the summer and for the services of three inspectors. A resolution was adopted authorizing the issue of $50,000 bonds for new buildings for the Board of Health.

Dedication of the Robin's Nest.—For the past six years this most practical charity, which affords a summer home for destitute and crippled children, has been maintained by young ladies residing at Tarrytown, Irvington and Ardsley. On Saturday last the new hospital and home was occupied for the first time and appropriate dedicatory services were held. The building has been newly equipped with all necessary and desirable improvements for the care of its inmates and opens its doors for the present season entirely free from debt.

Ophthalmia and the Health Board.—The New York Board of Health, at its last regular meeting placed ophthalmia on the official list of contagious diseases. This will make it necessary for every physician to report these cases to the Health Department. Many such cases have been prevalent of late among school-children, and to prevent its spread it has been put on the list and measures will be adopted for combating the disease.

The Coroners and the Hospitals.—During the past week an antagonism has arisen between the Coroner's Office and the house staff of Bellevue Hospital, which is not less childish than unfortunate. It is unnecessary to review the conduct of our city coroners for any great period of time to become impressed by a flagrant disposition on their part to magnify the little brief authority that attaches to this all but obsolete office. It is their delight to criticize severely any doctor with whom their duties bring them in touch, particularly if he be young or lacking in influence. In accord with this habit during a recent visit to the wards of Bellevue, one of the assistant coroners took occasion to report to the hospital superintendent a disposition of the members of the house staff to neglect sending prompt notification to the coroner in cases requiring ante-mortem statements. The terms selected to convey this criticism of the young doctors were far from complimentary and the latter, instead of replying in kind, have shifted the responsibility and taken a pleasant revenge by calling the coroners in season and out of season to see every patient for whom such a service might in the remotest degree seem desirable. By assuming an attitude less suggestive of cheap superciliousness and using expressions less tinctured with Bowery sarcasm when dealing with members of the medical profession, the coroners will find it possible to avoid much friction and trouble for which, as in this instance, they should blame no one but themselves.

Fees from Hospital Patients.—Dr. George R. Fowler of Brooklyn, has won another of the suits he has instituted to collect fees for services rendered by physicians in the hospitals with which he is connected. Justice Van Wart, in the Second District Municipal Court, recently awarded to William E. Taylor $160 for professional services rendered to Julius Anderson and his fourteen-year-old daughter. Justice Van Wart allowed the claim on the ground that "when one accepts a beneficial service from another the law presumes an intention on his part to pay therefor the reasonable value of the services rendered, and an agreement to that effect is implied."

St. John's Guild Hospital.—The Seaside Hospital of St. John's Guild will be opened for the reception of patients on Monday, June 16th. Patients will be sent to the hospital by the Staten Island ferry, a nurse and orderly being in attendance on the 10 a.m. and 2.30 p.m. boats. Tickets for distribution among the sick children of the poor of New York may be had free of charge at the office of the Guild, 501 Fifth Avenue, New York City.

College of Physicians and Surgeons.—Harsen prizes for proficiency at examination; three prizes, valused, respectively, at $500, $300, and $200, have been awarded. First prize, Charles E. Webster, Jr.; second prize, Seward Erdman; third prize, Hermann von W. Schulte. Each of the ten honor men who do not obtain a higher prize receives a Harsen prize of $25. These honor men are C. E. Webster, Jr., Seward Erdman, A. M. Peppenheimer, Ralph M. Beach, William T. Bull, H. von W. Schulte, James Francis Rice, Austen Fox Riggs, Philip Bissell, Henry W. Titus. Harsen prizes for clinical reports, founded by the late Jacob Harsen, M.D., three annual prizes, valued, respectively, at $150, $75, and $25, were awarded to Joseph Frederick Saphir, Isaac Seth Hirsch, Edward Anthony Spitzka, respectively. Alumni Association prize, a biennial prize of $500, open for competition to the alumni of the College of Physicians and Surgeons, was received by George Alfred Laurence. Three fellowships of the annual value of $500: Fellow in Anatomy, Edward Anthony Spitzka; Fellows in Pathology, Hughes Dayton and Augustus B. Wadsworth. Alonzo Clark Scholarship, established by bequest of the late Alonzo Clark, M.D., LL.D., for many years President of the College of Physicians and Surgeons, to promote the discovery of new facts in medical science, annual value about $700, was obtained by Augustus Jerome Lartigau.

PHILADELPHIA.

Location of the Pest-house.—The question of the new location for the city pest-house is still agitating the residents in the neighborhood of the proposed site. A meeting of the citizens to protest against this location has recently been held and the meeting addressed by property-holders and by members of the medical profession. The location is opposed largely on account of its proximity to the water-supply of the city, the medical profession holding that it would render the entire city liable to great danger arising from the pollution of the reservoirs.

The Jewish Hospital.—The double corner-stone laying at the Jewish Hospital was celebrated June 1st. The corner-stones were for the new operating building and a new hospital for pay patients. A pleasant feature of the ceremony was the announcement of a $20,000 gift from Mrs. Eisner for the erection of a new nurses' home.

Plaster of Paris in Orthopedic Surgery.—The American Orthopedic Association recently held its meeting in this city. On Thursday evening the meeting was devoted to a discussion on plaster of Paris.

Smallpox in Tioga.—Owing to a case of smallpox in the Odd Fellows Home in Tioga, the place has been quarantined. A servant developed the disease, was removed to the Municipal Hospital and the buildings thoroughly fumigated.

Danger in the Use of Carbonic-acid Gas for Inflating the Stomach.—At a recent meeting of the County Medical Society Dr. Moses Behrend read a paper in which he pointed out the danger of using carbonic-acid gas in inflation of the stomach and reported three deaths which seem unquestionably due to this cause. In each instance, one dram each of tartaric acid and sodium bicarbonate were used. In the first case the patient became greatly distressed soon after the drugs were taken and half an hour after vomited a quart of blood. This was followed by more during the next twelve hours, the patient dying from hemorrhage twenty hours after the stomach was inflated. Autopsy showed ulcers of the stomach with rupture of a vessel at the base of an ulcer. The second case was that of a male, aged seventy-three years, who ejected froth and blood soon after inflation of the stomach. Prostration, from which he never rallied, soon came on and death occurred the ensuing day. Autopsy showed carcinoma at the junction of the esophagus and stomach. The third case was that of a male, fifty-three years old, in whom the stomach was not inflated by the powders. The patient became dazed almost immediately and soon died. Autopsy revealed a dilatation of the esophagus with suppurating tracheal glands. Dr. Behrend condemns the use of this method of diagnosing conditions of the stomach in office or dispensary practice. In hospitals it may be used when serious lesions are excluded. These are more dangerous when situated at the junction of esophagus and stomach.

Dilatation by Carbonic-acid Gas or by Stomach Tube?—Dr. William E. Hughes, under whose charge some of the cases just reported had occurred, said that he had used that method largely and indiscriminately with no fatal results before these. Since they occurred he had experimented with the Seidlitz powder upon cadavers in a number of instances in order to observe its effects upon the stomach. But little distention followed. This may have been due to the coldness of the stomachs, although the test was made very soon after death. In the living body there is danger only in exceptional circumstances. If there be dilatation of the esophagus the danger is imminent. To avoid this, the operator should first satisfy himself that there is free entrance of liquids into the stomach. Diagnosis is often aided greatly by such dilatation of the stomach, but often it is not reliable practically as no distention follows. In one case four powders were given at one time and yet no distention followed. The patient experienced no bad results. Dilatation through a stomach-tube is a much more safe procedure. The danger from the use of gas is the sudden dilatation and this is no more valuable than the slower method.

Gift to Pennsylvania.—Provost Harrison of the University of Pennsylvania has announced a subscription of $100,000 toward the building fund of the new medical laboratories. The subscription has been made as a memorial and will be devoted to the Pathological Department. This contribution is one of the most munificent benefactions which the Department of Medicine of the University of Pennsylvania has ever received.

CHICAGO.

Treatment of Principal Defects of Speech.—Dr. James Moreau Brown recently read a paper on this subject in which he said that some authors regard stammering and stuttering as meaning the same thing. Others strongly insist upon the necessity of distinguishing one from the other as implying two different conditions. McCormac, perhaps the earliest writer upon these conditions, defines stammering as a hesitation of speech and stuttering as stoppage of speech, the proximate causes being in most cases an effort to utter words or other vocal sounds when the air in the lungs is exhausted and they are in a state of collapse or nearly so. Behnke, a later writer, defines stammering as a defect in the utterance of consonants and stuttering as a defect in the utterance of vowels. To illustrate this he states that if the stammerer wish to say "pa" he has a kind of lockjaw and cannot get his consonant out; this, however, once accomplished, he has no trouble in adding the vowel to the consonant. He may be equally confused in trying to utter a word commencing with a vowel and in spite of the widely-opened mouth no sound will be forthcoming. If a stutterer wants to say "pa" the case is exactly reversed; he has no difficulty in articulating the consonant "p," his difficulty consisting in adding the vowel to it. It is a general notion that a child will outgrow the impediments of speech and in some instances the difficulty does decrease as the maturer age is reached. The child learns speech by imitation and many defects of speech may be obviated by early training. Talking to children in the so-called "baby-talk" should in all instances be discouraged. The treatment of stammering and stuttering is by no means easy. A system has to be employed in which, perhaps, the entire mode of life must be changed, to say nothing of the continuous training, slight mistakes often causing a complete setback. The treatment, for the sake of convenience, may be divided as follows: Pathological Aspect: It is the opinion of many that stammering and stuttering may be successfully treated by the training of breath and speech alone. This is, however, erroneous as in the majority of cases it is first necessary to remedy any defects of the upper air-passages, and frequently one finds conditions due to a great extent to nervous affections. The speech difficulty may be a mere symptom of some grave nervous disorder which should have careful attention. Mental Aspect: It is a well-known fact that people afflicted with defects of speech, when in the presence of intimate friends and surroundings such as make them feel at ease, have complete control over the powers of speech, which shows that the underlying cause is mental and not physical. An excellent and amusing illustration of this is given by Kussman of Strasburg: "A woman was subject to sudden attacks of speechlessness, which occurred at intervals and lasted some time; during these attacks she was unable to articulate. Many forms of treatment had been resorted to without success. Finally, she was directed to mutter under her breath, at the commencement of every attack, the following words: "In the name of God, the Father, the Son and the Holy Ghost,' then turn around and expectorate, repeating at the same time, inaudibly, 'That is for thee,' while thinking of the devil. This remedy invariably stopped the attack." Other mental causes of stammering, together with timidity and shyness, are distrust, fear of ridicule, eagerness, impatience, excitement, envy and imitation. Elocutionary Aspect: This is, perhaps, the most important, and the subject of correct breathing and training is to be considered under this head. In a majority of cases the speech difficulty can be traced fundamentally to the management of the breath, and the results obtained by training a patient to manage his voice by means of diaphragmatic action are marvelous. As an illustration of this, a patient presents himself stammering very badly; when trying to say the alphabet he can scarcely pronounce a single letter and in endeavoring to reply to questions the whole body is thrown into contortions. Control of the diaphragm is obtained and a short inspiration taken before each letter by contracting the diaphragm and pronouncing the letter by relaxation. These movements can be controlled by placing the hand upon the abdomen and it is wonderful to observe the results obtained. The question naturally arises why diaphragmatic breathing should have such a beneficial influence on the voice. In reply to this it may be stated that clavicular breathing is unyielding and clumsy, owing to the bony structure of the upper part of the thorax and over which it is impossible to get easy and delicate control. The diaphragm, on the other hand, exercises muscular force on that portion of the chest walls which is surrounded only by soft and yielding parts and which can be trained to act with certainty and precision, the diaphragm being the great muscle of inspiration and expiration. Conversation for a time should be avoided as much as possible and during respiration slowness and equability should be adhered to. The lips and tongue should be placed in position and air expired with force, pronouncing one letter at a time, then two, and later sentences as the training develops itself. It is a common fault with stammerers and stutterers to try to speak with either widely-distended lungs or empty lungs, either of which is fatal to easy and smooth delivery, and to obviate this habit it is necessary to train the patient to breathe more lightly and more frequently. Breathing exercises not only give a more upright carriage to the body, but tend to develop the chest and keep the blood in active circulation. While they may not themselves effect a cure for stammering and stuttering, they nevertheless are the most important aids in the work. Phonation drill of the pharynx depends upon the action of the adductors, or closing muscles of the vocal cords. If these do not act no phonation of tone is possible, and if they act with uncertainty it naturally follows that the voice will be produced with uncertainty. Control over the soft palate also confers the invaluable power of breathing through the nostrils while speaking and singing, thereby preventing dryness of throat of which so many complain.

The time necessary for the treatment of stammering and stuttering will vary. Long-continued discipline and self-control are necessary—more so in children than in adults who are able to comprehend the importance of and continue the treatment alone. These methods of treatment are based upon the observations published by Henry McCormac in 1828 and upon personal observation in the speech-defect clinic of Dr. C. Hudson Makuen of Philadelphia.

Removal of the Uterus at Full Term of Pregnancy on Account of Large Fibroid of Cervix and Lower Segment of Uterus Blocking the Pelvic Cavity, with Recovery.—Dr. Carl Wagner of Chicago read a paper on this subject and exhibited a specimen at a recent meeting of the Chicago Medical Society. The tumor was so located that the parturient canal passed through it. A large part of the lower segment of the fundus of the uterus was invaded by the fibroid mass which represented the three forms of this kind of tumor, namely, submucous, intramural and subserous. The tumor encroached upon both ureters in such a way that one had to be dissected out of the tumor and denuded to the extent of two inches, and the other to the extent of one inch and a half. Neither the Porro operation nor Cesarian section seemed to be the proper procedure to be followed on account of the fetus being dead, the placenta macerated, and the liquor amnii decomposed, thus involving great risk of infection. Enucleation of the tumor by the vaginal route and evacuation of the contents of the uterus were impossible, the tumor extending too far into the fundus of the uterus. The ureters were included in the tumor on both sides, the bladder being drawn up and adherent, as were also loops of intestines. The uterus was removed together with the tumor in one total mass. The patient left the hospital seventeen days after in perfect health. According to the literature this is the first time that the uterus at full term has been removed with its contents and tumor in one mass.

GENERAL.

American Gynecological Society Officers.—President, J. E. Janvrin, New York; First Vice-PresiPresident, E. W. Jenks, Detroit, Mich.; Second Vice-President, A. P. Dudley, New York; Treasurer, J. M. Baldy, Philadelphia; Secretary, J. R. Goffe, New York.

Lives Lost in Chicago Sanitarium.—St. Luke's Sanitarium, apparently operated for the treatment of alcoholic patients without proper license, was consumed by fire on June 9th. Ten lives were lost and more than thirty inmates were injured.

Law and Medicine.—Princeton graduated this year a class of 258 men. Of this number 69 have asserted their intention of pursuing the law as a profession, while only 23, or exactly one-third as many, will choose the more arduous study of medicine.

Queen Wilhelmina Decorates Her Doctors.—The physicians who attended Queen Wilhelmina during her recent illness have been decorated. Prof. Roosenstein, the pathologist of Leyden University, has been promoted to the rank of Commander of the Order of the Lion of the Netherlands, and Drs. Konwer, Roessingh, and Pot have been appointed Knights of the same order.

The New Surgeon-General.—The President has appointed Dr. William H. Forwood, at present assistant surgeon-general, to succeed Surgeon-General Sternberg who will reach the age limit, and be retired within a few days. Dr. Forwood was born in Maryland, and became assistant surgeon in the regular army in 1860. By 1865 he had risen to the rank of captain assistant surgeon; he became lieutenant colonel surgeon in 1889, and colonel assistant surgeon-general in 1895. Dr. Forwood was in charge of the Montauk Hospital at the termination of the Spanish-American war and the success that attended the efforts to reinstate the health of the soldiers returned from Cuba was in a large measure due to his judgment and experience.

The Australian Quack.—As there is no proper medical law in Australia, nor, indeed, any legislative enactment in force by means whereof the practice of medicine may be confined to its duly-qualified exponents, quackery flourishes exceedingly, and in the most impudent and barefaced fashion. Statistics prove that each legitimately qualified practitioner living in Australia strives for his bread in competition with three quacks. But if the law does not protect the qualified man and despises the health of the community thus exposed to the ravages of impostors, the charlatan himself it takes to its heart and nourishes as though he were a precious jewel. Thus, if a man suffer from the negligence or malpractice of a qualified surgeon or physician and can prove his case, the law gives heavy damages to the injured one. But if a like injury be suffered at the hands of a quack, the law non-suits the plaintiff, remarking, with a wag of its asinine head, "My dear sir, you have no case! If you employ a quack to attend you, you do so at your own risk. You have no legal redress!"

Sanatoria for Consumptives.—The announcement of the prizes offered by King Edward for the best plans for a complete sanatorium for consumptives has been followed by a great deal of discussion. Dr. James Arthur Gibson, through the "Westminster Review," has made some criticisms and suggestions which have a bearing on the same problem in this country. He opposes the erection of a large sanatorium, which seems to be conditioned by the requirement that the plans shall provide for a sanatorium capable of accommodating 100 patients, and advocates rather the erection of a number of small sanatoria, and outlines a comprehensive plan with that end in view. Contrary to prevalent opinion, he declares that it is not advisable to build lying-out verandas. "They are bad for patients who are recovering," he says, "since they conduce to loitering and lazy habits, while they are also bad for those who are more ill, since they lead to overcrowding, talking, and excitement. Nor are recreation rooms, such as billiard rooms and other like superfluities, to be tolerated, for they but keep the patients indoors when they should be out, and besides, these meeting-places, with their excitements and overexertions, are most detrimental to progress in cure. Even chess and card games are exhausting. I have lived through it all and know just exactly what these excitements mean for the consumptive. Nor is it advisable that there should be a farm in connection with the sanatorium. The doctor in charge will have enough on his shoulders without that. A garden, however, which should provide green vegetables during as great a part of the year as possible, would be an advantage." He opposes as well the plan to provide in these public sanatoria for well-to-do patients, believing that it would lead to troublesome complications.

Bacteria on Mont Blanc.—In the Comptes Rendus of the Paris Academy of Sciences, M. Jean Binot publishes an account of his researches in the observatory on the summit of Mont Blanc, where he has been conducting bacteriological investigations at the highest altitude yet explored. As was to be expected, the air on the summit away from the observatory contains scarcely any bacteria whatever, only from four to eleven being detected in as much as a thousand liters, while in somewhat smaller volumes none whatever was found. As a rule, at lower altitudes, the number of bacteria increased, as for instance, at the Plan de l'Aiguille fourteen and at the Montanvert forty-nine were found in a thousand liters. Inside the observatory, in which M. Binot spent five days, from 260 to 540 microbes were found in the same volume of air, these being probably introduced by M. Binot and his companions during their temporary invasion of the building. The investigations were not, however, confined to the air on the top of the mountain, but included also bacterial examinations of freshly-fallen snow, old snow, ice on the surface and below, glacier water, and mountain streams. Freshly-fallen snow, even when sampled in large quantities, frequently contained no bacteria whatever, while in snow which had lain for some time usually only one or two microbes were discoverable per cubic centimeter; at the foot of the glaciers the surface snow contained rather more, the number varying from six to sixty-five per cubic centimeter, at the Mer de Glace. Glacier water is usually very pure, and, like the glacier ice from which it is derived, was found to contain a number of yeasts and some streptothrix; but while high up such water contained but from three to eight bacteria per cubic centimeter, a stream at the foot of the Glacier des Bossons contained ninety-five, while the water of the river Arve at Chamonix was found to have as many as 7,550 per cubic centimeter. Altogether, M. Binot examined 121 samples of air, ice, snow, and water, and isolated no less than 300 different varieties of microbes, one-third of which number he was able to identify as having been already studied and described, and the residue are being carefully investigated by him at the present time.

Southern Railway Surgeons.—The Association of Southern Railway Surgeons met last week at Washington and held a session during which much scientific work of special interest to its members was done. Old Point Comfort, Va., and the first Tuesday of July, 1903, were the time and place selected for the next meeting. The officers elected are as follows: President, Rhett Goode, Mobile, Ala.; First Vice-President, T. P. MacMahan, Illinois; Second Vice-President, W. M. O'Brien, Alexandria, Va.; Secretary and Treasurer, J. J. Harrison, London, Tenn.

Exhibition of Old Books on Ophthalmology.—One of the pleasantest and most interesting evidences of that growing sense of scholarship and interest in historical subjects at the recent meeting of the American Medical Association was an exhibition of the earliest works bearing on ophthalmology. This very superior collection was gotten together by a committee consisting of Drs. Casey Wood, Chicago; A. R. Baker, Cleveland; A. A. Hubbell, Buffalo, and Harry Friedenwald, Baltimore. The books were exhibited in a room adjourning the section room and were well arranged and suitably labeled. Other sections of the Association could follow this example to advantage.

Association of Military Surgeons.—The eleventh annual session of the Military Surgeons of the United States convened in Washington on June 5th and 6th. The attendance was good and included representatives of the armies of Japan, Great Britain, France, Italy, Canada and Mexico. Addresses of welcome were made by President Roosevelt, by Commissioner Macfarland of the District of Columbia, by Dr. S. S. Adams, in behalf of the medical profession of the district, and by Lieut. Col. J. Van R. Hoff of the District National Guard. The last mentioned gentleman dwelt upon the inadequacy of the medical department of the State Militia, which in point of numbers is not more than half sufficient to supply the needs of the most advanced line of assistance, leaving entirely out of consideration everything from there to the base hospital. The Enno Sanders prize, consisting of $100 in gold and a gold medal, was awarded Lieut. Col. Valery Havard, U. S. A., for the best paper. His subject was "The Most Practical Organization for the Medical Department of the United States Army in Active Service." The regular routine of the scientific program was pleasantly interrupted by a banquet and reception. The next annual meeting will be held in Boston, Mass.

Obituary.—Dr. George W. Woods, a retired medical director of the United States Navy, died on June 10th in San Francisco. He was born in New Bedford, Mass., in 1838.

Dr. Benjamin A. Church dropped dead in Oneonta, N. Y., on Friday, June 6th. He was born in 1855 at Coventry and graduated with high honors from the University of the City of New York in 1878, being later connected with the university. He was a prominent member of the New York State Medical Association. He leaves a widow and one son.

Dr. Otis Freeman, who is believed to have been the oldest practising physician in America, died at Freehold, N. J., on June 8th. Dr. Freeman was born in New Hampshire, Dec. 30, 1809. He continued to practise up to five days before his death, although he had been confined to the house for several weeks past as the result of a fall. Dr. Freeman was appointed a surgeon in the Civil War by Governor Olden of New Jersey in April, 1862. After the battle of Sailors' Creek, Va., he worked for fourteen hours without cessation over the operating-table. While mounting his horse in a hurry during the war Dr. Freeman received an injury which entitled him to a pension. He did not apply for it, however, until last year. After much trouble a pension of $12 per month was granted him.

Dr. William Armistead Nelson died June 6th at the residence of his son-in-law, Rudolph P. Miller, 141 East Fortieth Street, New York City. He was a descendant of the Nelson family of Virginia, prominent in Revolutionary times. Dr. Nelson's grandfather was Col. William Nelson, who took an active part in the siege of Yorktown. His great-grandfather was Thomas Nelson, Secretary of the Virginia Council, whose house at Yorktown was the one used by Cornwallis as his headquarters and was totally destroyed by the American shells. Governor Nelson, the signer of the Declaration of Independence, was a great-uncle of Dr. Nelson. Dr. Nelson was born at Fredericksburg, Va., in 1817. He studied medicine at the University of Pennsylvania, where he took his degree in 1839. He was soon appointed assistant surgeon in the United States Navy and accompanied Commodore Perry on his expedition to Japan. In 1854 he was appointed surgeon. He resigned shortly before the Civil War, and on the outbreak of that conflict joined the Confederate Army as surgeon, serving at Yorktown, Richmond, and in Louisiana. After the war he moved to Missouri, where he practised medicine for many years. He was married in 1846 to Mary Robinson Moncure, and was a cousin of Thomas Nelson Page.

CORRESPONDENCE.

A CORRECTION.

The Editor of the MEDICAL NEWS:

DEAR SIR.—In your issue of March 8th, in the report of the Transactions of the Harvard Medical Society, I am credited with the following statement: "Dr. Grandin does not think he has ever seen a case in which recurrence did not take place after hysterectomy for cancer of the uterus."

In the interest of statistical data—if of no other—allow me to state that I am incorrectly reported. What

I desired to say, and what I would ask you to publish, is that I have never seen a case in which after hysterectomy for cancer of the *cervix* recurrence did not set in. I have knowledge of fully a dozen cases in which after hysterectomy for cancer (or allied forms of malignancy) of the *corpus uteri* recurrence has *never* set in—in certain instances after the lapse of eight years.

You doubtless note the importance of the desired correction.

Egbert H. Grandin.

36 East 58th Street, May 26, 1902.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

LATENT PERIOD IN GRAVE ABDOMINAL INFLAMMATION—BILHARZIA IN ITS CLINICAL AND PATHOLOGICAL ASPECTS—A NEW PATHOGENIC BACTERIUM RESEMBLING BACILLUS PESTIS—THE ACTION OF HIGH-FREQUENCY CURRENTS ON BACTERIA—PARALYSIS OF THE CERVICAL SYMPATHETIC NERVE—PROBABLE COMPLETE ATELECTASIS OF THE RIGHT LUNG FROM BIRTH—FOOD PRESERVATIVES.

During the past few weeks the medical societies of Britain have been active in scientific affairs. The following abstract of important meetings will be of interest to our readers. A. H. Tubby, at the Medical Society of London, April 28th, read a paper on the quiescent or latent period in the course of grave abdominal inflammation, which has already been published in brief form in Medical Progress. The discussion which followed this paper is instructive. T. D. Savill referred to the importance of the subject, both in its medical and surgical aspects, and confirmed the value of the pulse-temperature ratio as an indication of gravity. The temperature was often subnormal in these latent abdominal cases, but if the pulse were persistently rapid, say over 100, the case called for further investigation and usually prompt surgical aid. His experience did not lead him to attach so much importance to the actual number of leucocytes as an indication of suppuration as to the proportion of polynuclear cells to the other white cells. Normally this is 65 per cent. and no obscure pus-formation can occur without an increase in this proportion. Blood-films, which could be easily stained and examined, should always be investigated in latent abdominal affections of the kind referred to by Tubby.

J. H. Bryant emphasized the importance of leucocyte counts in the diagnosis of all obscure abdominal suppurations. He lamented the fact that so little is done in this country in the way of systematic blood-examination and pointed out that at the Johns Hopkins Hospital in America systematic and thorough examinations of the blood are made in every case admitted, irrespective of the diagnosis. He alluded to some cases of appendicitis under his own care in which the presence of leucocytosis had been an indication for surgical interference, and the absence of leucocytosis a contraindication. The importance of the rapid pulse-rate as an indication for operation he fully endorsed. A slow pulse with high temperature in his experience had rarely, if ever, been associated with any form of latent abdominal suppurative disease requiring surgical aid. With regard to the presence of chest complications as an indication for operation, he thought the great difficulty of distinguishing diaphragmatic pleurisy and basal pneumonia from primary abdominal disease lies in the occasional immobility of the diaphragm and the presence of abdominal pain and tenderness in the former conditions.

J. Hutchinson, Jr., remarked that there were two classes of quiescent phase, one in which it comes on before and the other in which it comes on after the more marked signs of abdominal disorder. These require different interpretations. The explanation of this latent phase by derangement of the nerves of the intestine does not always obtain. Rigidity of the muscles is not by any means an infallible sign of peritonitis. As to leucocytosis the results seemed to differ in the hands of different observers.

F. H. Hall referred to the question of diagnosis of diaphragmatic pleurisy and appendicitis. In some cases of appendicitis the diaphragmatic lesion is evidently, from its symptoms, of peritoneal nature.

Lieutenant P. S. Lelean, R.A.M.C., presented a communication on the bilharzia in its clinical and pathological aspects, illustrated by lantern slides and microscopical preparations. After dealing with the morphological relations of this parasite, its development was fully discussed. He had demonstrated the actual hatching of an embryo in blood-serum kept for twenty-four hours at a temperature of 30° C. This, coupled with the observation of an embryo hatched in undiluted urine, established two most important links in the chain of events possible in auto-infection. The hatching of bilharzia ova in serum had been previously regarded as impossible, and it completely removed the main objection which had been urged against Sonsino's theory of auto-infection. The adult worm is found only in the portal system, but the embryos migrate and may be found anywhere. When death occurs it is usually due to pneumonia. The channel of infection was next discussed. The invasion of the parasite through the urethra during bathing was possible, but the evidence points to its entry through the rectum, thus gaining access to the portal system, which is the habitat of the adult worm. The disease is very rare in women, who in tropical countries bathe as often as do men. In the treatment he considers three remedies of value. Urotropin is useful, especially for the cystitis and hematuria, but applications of benzoic acid and methylene blue have more direct effects on the parasite and produce an amelioration amounting in some cases almost to a cure. His own treatment is to apply every fifth day four grains of methylene blue three times a day; benzoic acid is applied in the interval.

Surgeon-General Keogh, A.M.S., referred to the growing importance of the subject, because a number of cases would certainly be coming home from South Africa. A number of cases of so-called dysentery were really cases of bilharzia.

E. Klein, at the Pathological Society of London, May 6th, exhibited lantern slides and cultures of a bacillus which he has found in the dead bodies of rats and which resembles the bacillus of plague (bacillus pestis) in its morphological features and in its pathogenic qualities. It differs, however, from that organism in its cultural characteristics.

A. G. R. Foulerton read a paper on the action on bacteria of electrical currents or discharges of high potential and rapid frequency. The results were given of some preliminary experiments made at the commencement of the systematic investigation into the action of some of the currents on various micro-organisms. The experiments as a rule were carried out by spraying the current over the surface of an emulsion in water of the bacteria tested. The current was applied by means of a platinum brush; a platinum wire was sealed through the bottom of the tube containing the emulsion, by means of which the current was either carried to earth or discharged into the air. The experiments were carried out at a temperature of from 15 to 16° C. The voltage varied from 35 to 24 and the current from 2½ to 5 amperes. Small quantities of nitric acid and ozone were probably carried into the emulsion, which became acid in reaction, but these substances probably did not materially influence the results obtained. The bacteria which had been tested were bacillus typhosus, bacillus coli communis, bacillus dysenteriæ (Flexner), bacillus anthracis, bacillus pyocyaneus, bacillus prodigiosus, staphylococcus pyogenes aureus, and streptococcus pyogenes. In the case of the bacillus anthracis (sporing culture) a certain proportion of the bacteria present were destroyed by exposure to the current for twenty minutes and the emulsion was sterilized by an exposure for forty-five minutes. In the case of the bacillus dysenteriæ the emulsion was sterilized by an exposure for thirty minutes, but for these two species the exact lower limit had not been determined. Emulsions containing the other bacteria were sterilized by exposures of from ten to twenty minutes' duration.

T. J. Bokenham also reported observations in the same field on the following micro-organisms, all suspended in watery emulsion: Bacillus typhosus, bacillus anthracis (asporogene), bacillus diphtheriæ, streptococcus pyogenes, and staphylococcus aureus. The results varied considerably according to the conditions of the experiments. With a brush discharge obtained from an Oudin resonator, sterilization was in every case complete after an exposure of from ten to twenty minutes. With a condenser discharge obtained from the solenoid portion of the apparatus and passed through the emulsion in such a way as to avoid any sparking, the result was in every case negative as regards sterilization; indeed, the vegetative growth of the cultures seemed to be in several instances reinforced. These experiments were merely of preliminary nature and are being continued. Much seems to depend on the actual tension of the current employed and on the chemical reactions developed at the points of entry of the current.

H. B. Grimsdale, at the Ophthalmological Society, May 1st, showed a case of paralysis of the cervical sympathetic nerve. The patient presented slight exophthalmos, a small pupil, reacting badly, vision only to the degree of perceiving light, tension, no reaction under cocaine by the pupil or the eyelid, and a gray reflex in the pupil possibly due to a detached retina.

Sir Hugh Beevor showed a case of probable complete atelectasis of the right lung from birth. The upper lobe appeared to be represented on the surface of the chest only by a small area against the clavicle. Evidence of fibroid disease, of pleural thickening, or of tumor was wanting and suggested collapse, acquired or congenital. Double coloboma of the iris and sector-shaped opacities of the lens, perhaps also the high and narrow palate, were of congenital origin. These latter deficiencies seemed to render it probable that the case was one of atelectasis from birth. The notes of the case were as follows: The woman was twenty-four years of age, single, under observation for three weeks; she sought advice for pain in the chest, which was alleviated by treatment for dyspepsia. She was small, of slight physique, of good family history as to her parents and brothers and sisters. Her personal previous history was exceptionally free from even childish ailments, an attack of diarrhea being all that her mother could recall. A skiagraph taken by Dr. Martin showed the heart entirely on the right side. There were no signs suggesting intrinsic disease of the heart, but it was displaced to a marked degree, the apex or maximum impulse being felt in the right axilla in the third interspace and 5½ inches from the midsternal line. In the first three interspaces pulsation might be seen and felt; it was also just palpable under the left breast. Dulness extended from the right margin of the sternum to the mid-axilla and from the third interspace downward. Above this interspace was a slight degree of dulness, which was still slighter over the inner portion of the first two spaces and above the clavicle. Percussion elsewhere showed an impaired note only on the right side behind from the middle of the scapula upward and to the axilla. Cardiac auscultation revealed a faint systolic murmur best heard at the base, a common symptom in right-sided displacement. Pulmonary auscultation showed a very faint respiratory murmur above the abnormal; cardiac dulness without evidence of consolidation, with patent bronchi. Vocal fremitus was equal above the clavicles and absent below on the right. There was no clubbing of the fingers. The other organs were normal.

A. E. Porter, at the Leeds and West Riding Medico-Chirurgical Society, May 2d, read a paper on food preservatives, pointing out that nearly every article of food and drink which is liable to fermentation might be adulterated by the addition of boron compounds—salicylic acid, formic aldehyde, sulphites, or similar antiseptics. Dealing chiefly with the boron compounds, he showed that this class of preservative is unlikely, in the proportion usually found in foods, to exert a prejudicial effect on the digestive ferments, with the possible exception of rennin and amylopsin in the cases of borax and boric acid, respectively, though meat which had been exposed to a mixture of these antiseptics was less readily digested by gastric juice. He further mentioned that feeding experiments on animals have usually given negative results, although H. E. Annett's observations on newly-born kittens suggested that in the very young nutrition might be impaired. No such result, however, was noted in the case of three children between the ages of two and one-half and five years, to whom boric acid and borax were given in quantities exceeding the relative medicinal doses. It appeared, nevertheless, that a considerable proportion of the population was liable to manifest toxic symptoms on account of idiosyncrasy or deficient excretory powers and apt to suffer from vomiting, diarrhea, and skin eruptions of some severity upon the administration of even medicinal doses of boric acid. The largest daily doses would probably be taken in milk and the result in the case of a patient suffering from Bright's disease or gastro-enteritis therefore might be disastrous. Milk had been found to contain as much as 80 grains of boric acid to the pint, probably on account of the opportunities which existed for the successive addition of the antiseptic at different stages of the milk traffic, a practice fostered by the misleading advertisements on some of the patent trade preparations. Among other common articles of diet by means of which boron compounds might be unknowingly introduced were mentioned cream, butter, margarine, ham, bacon, sausages, and pork-pies. As there should not be the slightest necessity for such an addition in the majority of foods, it was considered that the public was exposed to an unnecessary risk. The author regretted that no effective legislation exists enabling local authorities to check a practice by which the public is liable to the indiscriminate administration of powerful drugs which should be taken only under medical supervision.

SOCIETY PROCEEDINGS.

ASSOCIATION OF AMERICAN MEDICAL EDITORS.

Annual Meeting, Held June 9 and 10 1902.

The annual meeting of the Association of American Medical Editors was called to order by the president, Dr. Alexander J. Stone of St. Paul, Minn., at 2.20 p.m. The president's address dwelt on the opportunities for good that lie in the hands of medical editors and the need for greater solidarity in order to accomplish their aims. The first paper was read by Dr. T. D. Crothers of Hartford, Conn., who treated the subject of the evolution in medical journalism that has in the last twenty-five years raised the standard of all American medical journals and has created so many specialist periodicals.

Dr. Burnside Foster of St. Paul read a paper on "The Reciprocal Relations Between Physicians and Medical Journals." Dr. Chas. H. Hughes of St. Louis read a paper describing "A Step Forward in Affairs for the Profession." Dr. I. M. Love read a paper on "The Medical Journal and Its Duties to the Profession," and Dr. J. McDonald, Jr., of New York read a paper on "Common Problems of the Subscription Department."

The Tuesday session was taken up entirely by the discussion of technical medical journal questions—the collection of subscription accounts, the relationship of editorial and business management of medical journals and the methods for the extension of the scope of medical journal patronage.

The annual dinner proved even more genial than usual. Dr. Alex. J. Stone of St. Paul, Minn., the president of the Association, acted as an efficient toastmaster and was himself a prominent feature in the pleasure of the evening. After the President's address the members of the Association were welcomed to Saratoga by Capt. Walbridge, the editor of the Saratogian. Though his paper had been burned out in a disastrous fire in the early morning hours, he was ready to do his duty as an editor in welcoming his medical colleagues with a touch of earnestness that proved effective in creating a feeling of at-home-ness. Dr. G. Frank Lydston's (Chicago) poem, "The Man Behind the Knife," was in his absence read by the secretary and evoked marked interest. Ex-Governor Garcelon of Maine, the oldest living former President of the American Medical Association and the faithful attendant at meetings for over half a century, spoke reminiscentially of the Association, its growth and work, and incidentally of the good effect of the medical press in bringing the medical profession into a unity that is now practically complete.

Dr. Chas. H. Hughes, of St. Louis, editor of the Alienist and Neurologist, delivered an address on "The Medical Profession and the Medical Press; the Safeguards of Civilization and the Saviors of Liberty." Dr. Marcy of Boston, an old representative of the Association and an old medical editor, spoke of present and past and of the promising outlook for the future that present progress seems to furnish.

Dr. D. F. Ball, the secretary of the Association of American Medical Editors, outlined a plan by which the medical editors of the country may keep themselves in touch with the progress and bearings of important questions that may be referred to the American Medical Association or to its committees for action.

AMERICAN ACADEMY OF MEDICINE.

Twenty-seventh Annual Meeting, Held at Saratoga Springs, June 7 and 9, 1902.

First Day—June 7th.

The meeting was called to order by the President, V. C. Vaughan of Ann Arbor, Mich.

The "Personal Equation" in Marking Examination Papers.—Dr. Charles McIntire of Easton submitted a series of questions with their answers to a number of examiners, members of State boards and college faculties, to determine if the objection of the various standards of examiners urged against reciprocity is a valid one. The tabulated answers do not sustain that objection, two of the candidates failing and one passing in each instance. State boards were a trifle more lenient than colleges in their marking.

The Family Physician of the Past, Present and Future.—Dr. S. A. Knopf of New York pointed out the depreciation in value, owing to unfair competition, quacks, specialism, etc., of the family physician of the present. The family physician of the future was depicted as having more power than he of the past. The solution of the tuberculosis problem is an utter impossibility without his aid in early diagnosis and enforcement of sanitary laws. He is to be the leader in the physical and moral improvement of the race.

The Physician as an Accountant.—Dr. C. M. Culver of Albany would not inculcate selfishness in the physician, but some method of systematizing his accounts is a necessity. No one method of bookkeeping is advocated. That the books state the truth is the only demand.

Pure Science vs. Applied Science in Medicine.—Dr. Winfield S. Hall, of Chicago, defined the limits and pedagogic value of each and their relative value in the medical curriculum. There is no pure science in medicine as all cases are individuals. The physician is therefore best fitted for his work by a long study in applied science after receiving a basis of pure science in the literary college. In addition, the latter should furnish a small course of applied science. Even in the medical school the problems of chemistry, etc., can be made by the teacher problems of applied rather than of pure science.

Time Allowance in the Combined Collegiate and Medical Course.—The report of the committee on this subject provoked a lengthy discussion. The report being the replies received from 157 medical and literary colleges in answer to a series of questions bearing on this topic. A variety of views were expressed in the replies and in the discussion. Dr. Vaughan, in defending the six-year combined course now compulsory at Ann Arbor, said it was better for all to take this course than for a small number to take seven or eight years and the remainder only four. In time they hope to raise it to seven years.

The Religion of Science.—The address of the President, Dr. V. C. Vaughan, was said by him to be the personal opinions of one trained in scientific methods and who believes the average scientist to be a religious being. He would bring about a better understanding between the scientist and theologian, both of whom are honestly striving for the improvement of the race. Reasons were given why the scientist should not be called a materialist or atheist. The different conceptions of the Supreme Being were given, that of the scientist being that He is the soul of the universe, is the law of development and growth. The best way to study God is to study the laws of the world and the best service is to obey those laws. Man's position by gradual evolution, until now he is responsible for the improvement of the race was pointed out. The scientist by all his discoveries has aided very materially in the advance of civilization and morality. The scientist seeks the truth in whatever he does.

Second Day—June 9th.

The Medical Profession and Social Reform.—Dr. E. L. Devine of New York, by invitation, read a paper on this subject. He said that physicians should take into their confidence that part of the general public which has shown an interest in social welfare increasingly. The great part physicians can take in all social reforms was emphasized. Organized charity and physicians should coöperate in alleviating the condition of the poor.

The Political Side of Medicine.—Dr. J. B. Roberts of Philadelphia read the first paper of a symposium on "Politics in the Medical Profession."

The Relation of the Physician to Politics.—Dr. D. C. Hawley of Burlington read a paper with this title.

Compensation for Medical Service Rendered the State.—Dr. J. D. Davis of Pittsburg contributed a paper on this subject.

Medical Representation in Hospital Management.—Dr. A. A. Eshner of Philadelphia read this paper. The first two papers emphasized the importance of the physician taking part in the civil and political affairs of his country, especially when political corruption affects education, sanitation, etc. The peculiar qualifications of the physician for intelligently taking part in the control of his community were enumerated. The third paper condemned physicians for bringing about inadequacy of pay in public positions by undervaluing their services. The last paper was a convincing argument in favor of the medical staff of hospitals being represented on the managing board.

May Hospitals Steal?—Dr. P. Max Foshay of Cleveland arraigned present hospital methods which permit free treatment of people well able to pay, thus taking the case and the fee from the profession. An instance was given in which an employee of a large corporation was thus operated upon. The corporation manager advised others to do the same and evade the fee. Hospitals must investigate each case and modify their workings or the profession will become thoroughly disorganized.

Good Vision as a Factor in the Education Process.—Dr. S. D. Risley of Philadelphia emphasized the great need of systematic examination of the eyes of school children, actual tests in Philadelphia showing that 88 per cent. of children have congenital abnormality of vision, which in school life becomes serious in many cases. The admirable workings of the compulsory examination system now in force in Philadelphia were demonstrated.

State Aid for Medical Schools and Hospitals.—Dr. Charles McIntire of Easton gave the custom of each State in making appropriations for hospitals and medical schools.

Children in Cities.—Dr. Rosa Engelmann of Chicago pictured the adverse circumstances of poor children in cities. A review of the progress made in their care was given and the pressing need for further attention emphasized.

Election of Officers.—President, Charles McIntire, Easton, Pa.; Vice-Presidents, W. R. White, Providence, R. I.; George Dock, Ann Arbor; Rosa Engelmann, Chicago; D. C. Hawley, Burlington, Vt.; Secretary, Dr. A. R. Craig, Columbia, Pa.; Assistant Secretary, Dr. John S. Davis, University of Virginia; Treasurer, E. M. Green, Easton, Pa.

AMERICAN MEDICAL ASSOCIATION.

Fifty-third Annual Session, Held at Saratoga Springs, June 10-13, 1902.

GENERAL SESSION.

FIRST DAY—JUNE 10TH.

The meeting was called to order by the President, Dr. John A. Wyeth, of New York City, who introduced the Rev. T. F. Chambers of Saratoga Springs. The opening prayer called down blessings on the work of the Association and especially on the great humanitarian purpose of free discussion for the lessening of the suffering of humanity.

The Chairman of the Reception Committee reported the details of the social week and the gift of a handsome banner, 24x10 feet, with the letters "A. M. A." in white on a blue ground, the present of Dr. Johnson. The President of the Association in accepting the gift said that it would fly at every meeting of the Association. The Chairman of the Reception Committee announced an excursion to Montreal and the rapids of the St. Lawrence to start on Friday from Saratoga to which members of the Association and their families are invited.

The President introduced the Hon. S. F. Nixon, Speaker of the New York State Assembly, as one who had always been a pillar of influence for the medical profession of New York whenever there were questions of legislation involving the rights of the profession or infringing its privileges. The Speaker, Dr. Wyeth said, had never turned his back on any measure introduced into the House by the New York State Medical Association and had never failed to stand in defence when legislation threatened to impair professional dignity.

New York's Welcome.—Mr. Nixon said that New York State welcomed most heartily the American Medical Association. The national association owed its rise to New York State initiative and the people of the State appreciated the privilege of having the medical profession as guests. He called attention to the fact that all educational reform in this country had taken its first step in New York. Here was the first public library and the first normal school on the model of which schools have been erected in all parts of the country. In New York, too, the first regular official inspection of schools was organized. For medical education New York State has accomplished much and in nothing has she done more than in the insistence on preliminary education before medical studies begin. Mr. Nixon expressed the hope that one of the results of the present meeting would be the organization of a small group of medical standards throughout the country was to create a reciprocity of State examining boards.

The Assembly and the American Medical Association.—Mr. Nixon said that the Association is to the body physical of the country what the Assembly is to the body politic. Doctors, however, never make mistakes of diagnosis, but when legislators made mistakes in the diagnosis of ills in the body politic they are relegated to that home for decayed and convalescent politicians from which there is rarely any hope of being released. The legislators may be of service to their brothers by analogy of the medical profession and the members of the profession can be assured of the thorough appreciation and hearty coöperation of the Assembly of New York in their great humanitarian work.

Medicine and Faith.—Mr. Nixon recalled the case of the old king of the Hebrews who, abandoning his physicians, went to the Lord and rested shortly after with his fathers. There are in this day some misguided people who follow the same course with, it is said, very similar results. The progress of medicine in the last twenty-five years constitutes one of the most noteworthy achievements in all history. Rapidly American medical schools are rising to a level that places them on a par with the foreign medical schools. That the people of the State of New York and their representatives in the Legislature will be ready to help on this very good cause, the American Medical Association can rest assured.

The President then introduced the Hon. Edgar T. Brackett, the New York State Senator from the Saratoga Springs District, who made the address of welcome on behalf of the village of Saratoga Springs.

Progress in Medicine.—Senator Brackett said that while here to welcome the Association to Saratoga there seems also to be another reason for his presence as a speaker at this meeting. He had been selected as the one to be buncoed by the Osteopathic Bill at the last session of the New York State Legislature and it seems only proper that he should state his conviction that he shall not again be found in any such connection. Senator Brackett then spoke of the recent very great advances made in medicine. From Hippocrates to Valentine Mott, a period of nearly twenty-five centuries, no more real progress in medicine had been made than the thirty-seven years since Dr. Mott's death. The names of Lister, Koch, Pasteur and our own Marion Sims have acquired a deathless fame in this short period. What steam had done for locomotion and manufactures, antisepsis and anesthesia have done for medicine. A great profession here in America is nobly carrying on the work of noble predecessors and the people and legislators of the country will be proud and glad to help them in their philanthropic work.

Ex-Governor Garcelon of Maine, the oldest living ex-President of the American Medical Association, was then called to the chair and introduced the present President, Dr. John A. Wyeth, whose presidential address will be found on page 1117 of this issue of the Medical News.

(To be continued.)

SECTION ON SURGERY AND ANATOMY.

First Day—June 10th.

Chairman's Address: Surgery of Tuberculous Cavities of the Lungs.—Dr. Forest Willard of Philadelphia first thanked the members of the section for the honor they had conferred upon him in making him chairman. He had begun a series of experiments a year ago through which he had hoped to discover something new pertaining to surgery of the chest, but had met with no success. The difficulties surrounding work in that region are so great as in no way to compare with kindred procedures in the brain or abdomen. Respiration is so very potent a factor in its vital relation to success that greater skill and energy are called for on the part of the surgeon here than any where else, save in the presence of disease there is fulminating danger attending the opening of any chest. Cavities in the posterior parts of the middle and lower lobes are generally pneumococcic in origin. Various operations have been devised: (1) Compression of the lung by nitrogen or other harmless gases; (2) resection of ribs; (3) extreme cauterization externally; (4) injection of various drugs into the cavities; (5) pneumonotomy, and (6) pneumonectomy. The first, originally suggested by Murphy, has given very interesting results. The fifth has been recognized for some centuries; it was first practised in 1643. In Dr. Willard's experimental work he used chloroform or local anesthesia, resecting from the sternum back in the region of the third rib. In the absence of adhesions, these can be obtained in twenty-four hours by sutures. No irrigating should be done; all cavities must be mopped; preferably with zinc chloride. In conclusion, he said that pneumonotomy is feasible, but must be done early. In advanced cases cavities are multiple and are due to mixed infection. Success in lung surgery depends on the skilful use of the Fell-O'Dwyer or the Matas insufflator.

Surgical Treatment of Pulmonary Abscess Following Lobar Pneumonia.—Dr. F. W. McRae of Atlanta has looked over the literature most thoroughly and has found but 73 acute and chronic cases. One reason for this is that there is much difficulty in establishing a diagnosis. He gave in detail his two cases. The first, a lad of eighteen years, presented a symptom which is an unusually markedly characteristic of the condition. Every thirty days he coughed up a pint of pus within twenty-four hours. This had continued for eighteen months, until the boy was reduced to a mere rail. At the time of operation pus and blood poured out of the mouth. Recovery was rapid and in forty days was complete. The other patient was a male, fifty-seven years old, who had had an abscess for six years. He was nearly dead at the time of operation. Again there appeared the classic symptom. The man said that at such times he could be tracked from place to place by his sputum. His recovery was delayed, but is surely progressing.

Contribution to the Surgery of the Lung.—Dr. Horace J. Whitacre of Cincinnati based his observations on the history of 978 cases of tuberculosis at the Cincinnati Hospital for Contagious Diseases and on 100 autopsies. He gave a long history of the work since its inception, which dates back to the first days of aseptic surgery. He has studied the effects of compression, as suggested by Murphy, and thinks that there is probably a future for this treatment. Unfortunately, there are not yet enough cases recorded to give certain data. In excisions of portions of the lungs it is absolutely necessary for success to make an extended resection. The apical cases alone are suitable for this type of work and it is unfortunate, in view of the good prognosis, that only about 2 per cent. of all tuberculous lungs are of this type. His conclusions are as follows: (1) The majority of apical cases, which are the only ones suitable, drain better by the bronchus than by any external wound; (2) the nature of the cheesy material is by no means a favorable soil for the tubercle germs to grow upon. They, therefore, would tend to self-limitation; (3) the introduction of nitrogen gas will probably give good results in the future; (4) the highest possible percentage to be hoped for as affording suitable subjects for resection is 4 per cent.; (5) thorocoplasty is an operation of very great danger and will not be long continued.

In the discussion of these papers Dr. Smith of Hartford said that he had operated on three cases, two of which followed pneumonia. He considered the expedient a life-saving one in this type of cases. In tuberculous conditions, however, it is hopeless.

Technical Difficulties.—Dr. Mayo of Rochester spoke of the difficulty of getting sufficient space in which to operate. He said that here it was absolutely necessary to have the freest kind of drainage. Adhesions usually supposed to be characteristics of tuberculous lungs are frequently absent. He uses a wet gauze strip, which is stitched to the lung, there to remain until the time of operation, when it serves the double purpose of irritating the surface and mechanically guarding the pleural space. He said that the bands which one feels on making digital examination of these cavities should be broken only after they have been secured by artery forceps, inasmuch as the hemorrhage from them may be appalling.

Dr. Gibbons of Scranton said that he could not understand why it should be that death is said to occur so frequently as the result of operating upon the pleura. In the anthracite coal fields the miners' chests are frequently torn open, but there are very few immediate deaths from these injuries.

Dr. Oliver of Cincinnati said that although the amount of lung surgery was still small, enough had been done for one to reach a very positive conclusion, viz., that operative interference is harmful in tuberculous conditions.

Dr. McRae in closing said that he had purposely excluded, in his observations, the tuberculous lung. He cordially agreed with Dr. Mayo in his able suggestions.

Dr. Whitacre said that many cases of empyema originate in small abscesses of the pleura which break into the cavity. Adhesions are not proportionate to the involvement.

Report on a Case of Encysted Dropsy of the Peritoneum.—Dr. Miles F. Porter of Ft. Wayne said that the percentage of recovery from tuberculous peritonitis is not so high as is commonly supposed. There is no single theory to explain the strange recoveries after simple section. The mere fact that air and light are freely admitted to the cavity does not suffice to answer the question; nevertheless, they must be potent factors. The incision should be a free one and the wound should be left open for at least fifteen minutes. All deposits should be removed, but whenever possible, adhesions should be left alone. Drainage should not be established save in cases of mixed infection. He urged that the future should bring about the use of actinic and X-rays introduced within the abdomen at the time of the operation. In the discussion of this paper Dr. Ransohoff of Cincinnati said that many cases recover under medical treatment. Inasmuch as the profession is upon the threshold of great developments in the therapeutic application of the X-ray to tuberculous conditions, it is inopportune to reach any conclusions at present.

Dr. Halstead of Chicago said that air and light have little or no effect. The cure is undoubtedly due to traumatism inflicted at the time of operation. If the sacculations be multiple, there must be as many drains as sacs, and it is essential that if tuberculous tubes be found they should be removed.

Dr. Weir of New York said that speaking on the spur of the moment he felt that the general view would be that no true conception of the mode of infections in tuberculous peritonitis is at present known. There are two distinct types, one in which the fluid is free or encysted, another in which there is no fluid whatsoever. The first type is the one favorable to operation.

Dr. Ochsner of Chicago said that he had concluded from a very large series of cases that there are certain cases in which rest, hygiene, etc., give a recovery of 50 per cent. This is typically true of the acute form with ascites. The absolute indications for surgical intervention are as follows: (1) If a case under such conditions fails to improve after three months; (2) all cases of encysted fluid. In the presence of adhesions removal of tuberculous tissue is not to be made. The peritoneum has a wonderful capacity for absorbing such material. Fistulæ are usually the result of meddlesome surgery, but, if they develop, they should be left alone.

Pathological Features.—Dr. La Place of Philadelphia said that the subject should be considered from a laboratory as well as from a clinical standpoint. It is well known that the bacillus is a very frail one and dies on the slightest exposure to inimical environment. It is not the baneful germ which is generally pictured. Pure infection is distinctly benign and tends to get well of itself. For this reason, there is so great a difference between the abdominal type and that which occurs in the joints and lungs that they cannot be discussed together.

Dr. Tinker of Baltimore said that Virchow taught that cure was due to the determination of the blood to the region of operation and not to light or air.

Dr. Hall of Cincinnati said that a very large proportion of cases are due to infection from the tubes, very few coming from the appendix. He commended drainage and said that the more chronic the case the better the chance after operation.

Dr. Porter in closing said that the point he had tried to make was that cure from section arose not from one factor alone, but from a number. He in no way deprecated the assistance of the increased blood-supply, but inasmuch as Dr. La Place himself had just said that the tubercle bacillus died with the greatest ease in the laboratory under the influence of light and air, it seemed but rational to ascribe some share of potency to these factors.

Low Lateral Pharyngotomy for Approach to the Lower Portion of the Pharynx, upper Portion of the Esophagus and Posterior Surface of the Larynx.—Dr. Joseph D. Bryant of New York dwelt interestingly on the surgical anatomy of the part and the technic of his operation. He said that the lateral incision is to be chosen in these patients because of the freedom of danger to important structures. The patient upon whom he operated was singular in that he presented but few symptoms of any kind. There was a tumor in the pharynx 5½ inches from the teeth. It was soft. No external evidence denoted its presence. The patient was put in a semisitting position, a tracheotomy tube was placed in the larynx and chloroform was administered. The tumor was enucleated with the finger and proved on examination to be a fibrosarcoma weighing almost 500 grains. The literature of this subject, which had been looked up by Dr. Haubold, affords but scattering instances of this type of operation.

Dr. Dawbarn of New York said that he had been very much interested in Dr. Bryant's technic which brought vividly to his memory a somewhat similar case upon which he had operated many years ago. He wished to take occasion to remind the Section that the posterior border of the thyroid cartilage seemed very much like a foreign body to the examining finger, so much so that it had for a moment made him believe he had found the object of his search—a plate of false teeth. This can be avoided by the use of a male sound placed in the pharynx. He thought that a great deal depended upon the after-treatment of all these pharyngeal cases. It is customary with him not to give anything by mouth three weeks. Inunctions of animal fats, after massage and copious rectal feeding, will keep patients alive for an indefinite period. He does not close the external wound for a week, but obtains good union when he sutures it.

Dr. Weir of New York agreed with Dr. Dawbarn in the importance of the post-operative treatment of these cases. He packs the external cavity with a gelatinous mixture of iodoform.

Dr. Bryant in closing said that the gentlemen who wondered why he chose the lateral route might rest assured that he did so only after due deliberation. The fact that the tumor seemed attached to the deeper parts and was on the right side would in itself suggest this technic. He spoke of the great value of holding up the greater cornua of the hyoid with a tenaculum. It serves to hold the region steady for the deeper incision and enables one with ease to tie the lingual arteries. In regard to the use of the snare, either hot or cold, as had been suggested by some of the speakers, it was obviously more surgical to remove this type of malignant, broadly pedunculated tumor by enucleation rather than by any cutting process.

SECOND DAY—JUNE 11TH.

A Modified Method for the Cure of Relapsing Talipes Equinovarus.—Dr. A. S. Jonas of Omaha first spoke of the remarkable frequency of this deformity. Treated by the older methods in the presence of suitable environment, these cases almost always do well, nevertheless there is a very large class existing among the poor, for which, none of these older methods are satisfactory. This is because of the inability of these people to pay for more or less expensive retentive apparatus and also because they are unable to follow the surgeon's directions for aftertreatment with the necessary intelligence. In 1881 Phelps departed very widely from the old teaching in advocating a free incision of the soft parts and Schede laid the foundation for applying this incision to the bone as well when he presented his method of healing under a moist blood-clot. Dr. Jonas had operated by Phelps method many times in cases of persistent relapses, but he had found much annoyance from the subsequent cicatrization of the denuded area. He had tried skin-grafting without satisfactory results. He consequently had evolved a sort of shifting, plastic operation which had given him great satisfaction and which he desired to present.

The incisions are V-shaped and include all the soft parts. The incision is broadly pedunculated and at the termination of the operation, which may or may not embrace section of the neck of the astragalus or indeed its entire removal, it is swung down to cover the bared region. Subcutaneous division of the tendo Achillis is then done, and the extremity put in plaster for five weeks. If the incisions have been so free that the flap falls into position by its own weight, there need be no fear of sloughing. His conclusions were that a triangular flap in pronounced relapsing chronic cases is a very valuable addition to Phelps' technic, that the astragaloscaphoid ligament and synovial pouch should not be torn. When a simple division of the soft parts does not suffice to correct the deformity absolutely, cut the neck of the astragalus; if still insufficient, do cuneotomy, this failing, remove the bone.

Prevention of Deformity.—Dr. W. R. Townsend of New York said that so much progress had recently been made in the line of preventive medicine that it was high time similar efforts were instituted in preventive surgery. It is no exaggeration to say that more than one-half the existing deformities could have been prevented by intelligent early treatment. Very many of these are due to infantile paralysis, rheumatism, chronic joints, and burns, and if the family practitioner would appreciate that a little care on his part would obviate serious subsequent deformity, almost one-half of the work of the orthopedic surgeon would vanish. In many cases it is not the deformity itself which leads to the invalidism of the patient, but the secondary troubles which arise from the primary cause. It is without doubt true that all non-congenital cases of clubfoot are preventable. These may be divided into the simple acquired, the paralytic and the traumatic. Again, it is surprising that the general surgeon fails to learn by experience that it takes months rather than weeks for bones to grow solidly together after resection of joints. Many cases subsequently come to the orthopedist absolutely incapacitated for work from the omission, by the operating surgeon, of applying suitable support to the extremities. In the course of certain diseases it is well known that wrist and toe drops are characteristic and common. These are usually left untreated and may lead to all sorts of contractures and deformities if not given support. In closing he emphasized the fact that the general practitioner should know more of these matters.

The discussion of these papers was opened by Dr. Henry L. Taylor of New York. He said that no one who had occasion to work in the swarming clinics of a great city could fail to appreciate the fallacy of the time-honored proposition that children outgrow deformity and that there is no haste about instituting treatment. If in the thousands of cases of infantile paralysis, which, as had been said, go on to various forms of deformity, one quarter of the time which is spent upon them in the administration of electricity and other remedies might be given to the intelligent holding of the parts in their normal relations there would be much less trouble from this fruitful source. He thought that Dr. Jonas' plan to cover the bare spot, which occurs as a result of Phelps' operation, was a very ingenious and useful device.

Dr. Sherman of San Francisco had given up Phelps' method years ago, having had much better results from brisement and subcutaneous section. He thought that the back of the family physician would break, or at any rate need a brace, if any more burdens were imposed upon it, and Dr. Townsend could in truth scarcely expect that hard-worked person to do what he had asked of him. He said there were certain cases in which it was not possible to prevent by any form of splint backward displacement of the leg upon the thigh.

Dr. Steele of St. Louis, while agreeing that Jonas' operation was ingenious, had found the open technic quite unnecessary in the vast majority of cases. Brisement, plaster and manipulations suffice, in time, to effect restitution of the parts permanently and without fail. Although the profession is of course absolutely altruistic, some laymen do not appreciate it and Dr. Townsend would be criticized by them for destroying his own business. If the family doctor could be taught to do what Townsend suggested, the latter could retire from business.

Dr. Warner of Columbus said that in all open operations success depended upon the removal of all tendency of the deformity to return. This, rather than the direction of character of the incision is paramount.

Dr. Sullivan of Chicago said that it was a favorite question with mothers when to begin to correct the child's deformity. Sayre's answer to this was "after the third stage of labor." No better apparatus than the mother's or nurse's hand exists.

Dr. Thompson of Scranton said that he had never had the privilege of literally carrying out Sayre's doctrine, but that he had instituted treatment in many cases after the baby's first bath. Because of this he had been able to renounce the open operation absolutely.

Dr. Jonas in closing said that he had been slightly misunderstood; that he only meant to suggest his modification in the old relapsing cases. Inasmuch as dead spaces are always to be avoided if possible, it is wise to divide tendon and fascia diagonally rather than transversely; this is an additional reason why the open incision is better than the closed.

Gunshot Wound of Cavities.—Dr. William L. Rodman of Philadelphia spoke on the diagnosis, the prognosis and treatment of thoracic and abdominal wounds. A very interesting fact touching on the diagnosis of thoracic lesions has been elicited in the recent wars. It is that hemoptysis may frequently occur in cases of bullet injury in which the viscera are intact. Whether rightly or wrongly, this has been ascribed to the violent impact of the bullet. In any event it upsets the time-honored statement that such hemorrhage meant perforation. In most text-books gloomy statements relative to the prognosis of penetrating chest wounds are found. These need revision. For such patients recover under suitable treatment. Such treatment consists in strapping the chest, in giving opium and in leaving them alone. After strapping has been applied there is nothing so beneficial to the patient as a masterly inactivity on the part of the surgeon. He could give no more graphic presentation of his views on the question of hunting for bullets than the following little history quoted from Abernethy: "Sir Ralph Abercrombie received a bullet in his thigh. The surgeons groped and they groped and they groped and Sir Ralph Abercrombie died."

Statistical Inquiry.—It must not be forgotten that both in civil and military practice there occur many perforating wounds of the viscera which do not enter through the abdominal walls, but pass via the pelvis or the thorax. These are naturally very difficult to diagnose. It is anomalous and extraordinary that no less than 3 per cent. of penetrating abdominal wounds are non-perforating. This is more true of the wounds which pass from the fore backward than of those having a lateral path. The prognosis of abdominal wounds is always grave, since 55 per cent. of all patients not operated upon die. Those fortunate enough to receive surgical help within the first four hours recover in 85 per cent. of cases. If the operation be delayed from 4 to 8 hours, 44 per cent. die; if 9 to 12 hours, 63 per cent. die; after 12 hours, 70 per cent. die. He wished to be placed on record not as urging operation, but early operation. Probably the reason that the patients operated on within the first four hours have such a small death-rate is that during the whole of this time the ectropin of the mucous membrane and the intestinal paresis resulting from the trauma persist for about that period of time. The danger increases in pretty direct ratio with their passing away. Aside from the actual technic there is probably no one factor which has tended so much of late to improve statistics than the free infusions which have been practised and the introduction of generous drainage. This latter, it may be wise to omit in military practice, but in the wounds met with in civil life, its omission must be considered erroneous. In the event of injury to the lesser peritoneal cavity, posterior drainage should always be instituted and it is by no means settled whether this type of drainage may not be indicated in every case of injury by the leaden bullet.

Abdominal Wounds.—Dr. McGraw of Detroit in opening the discussion said that there was a curious old legend which led many people astray even to this day. It was that bullets striking the abdomen might pass in a circuitous route from before backward and thus avoid injuring the viscera. While occasionally it may be true that a spent ball on striking the head, takes this strange course under the scalp, it is inconceivable how the soft parts can deflect the bullet. When men are under the terrific strain of battle their abdomens are continually changing in shape and it is not difficult to believe that many of them on being struck in the mid line happen at that moment to have the anterior abdominal surface in contact with the backbone. This seems a rational explanation of the cases of bullets passing through an abdomen without injuring the viscera. The treatment is immediate operation without too much regard for asepsis.

Dr. Grant of Louisville had just come from the meeting of the Army Surgeons and said that they were of one opinion, *viz.*, that successful laparotomies could not be done on the field of battle.

Dr. Roberts of Philadelphia called attention to the importance of venesection in cases of incipient pneumonia which occasionally follow bullet wounds. He took strenuous exception to the statement made by one of the speakers that shock is virtually hemorrhage.

Dr. Ochsner of Chicago said that in the treatment of the injuries of the chest, immobilization, absolute and complete, of both sides from shoulder to umbilicus was the secret of success. Add to this a let-alone policy and most patients recover.

Dr. La Place of Philadelphia said that the prognosis of injuries to the alimentary canal depended very much on whether the gut was empty or full. Immediately after the injury there is a contraction of the muscles which forces either mucous membrane or food through the wounds. In one case they are plugged; in the other the peritoneum is infected. Too much attention should not be given to the use of aseptic food, inasmuch as it is the injury to the mucous membrane, rather than the reduction of the number of bacteria upon it, which causes the fatalities.

Dr. Grant of Louisville spoke on the technic of these operations. He said that inasmuch as exploratory laparotomy can be done without serious danger, it should be practised in all suspected cases. Grossly speaking, the steps of the operation are as follows: Control the bleeding; close the perforations; do the toilet of the peritoneum. He had observed that in the event of the operator's having found an even number of holes in the gut and having discovered the bullet, the probabilities were in favor either of his having found all, or having omitted two or a multiple of two. He would always use drainage.

Dr. Gibbons of Scranton suggested that in almost every case of gunshot wound of the abdomen it is a wise procedure to place a catheter in the bladder prior to operation. If there be an immediate passage of blood, the bladder is injured. If this should occur within half an hour it denotes trauma of the ureters or kidneys.

Dr. Dawbarn of New York said that in considering the treatment of wounds of the chest, in which so-called medical hemorrhage was occurring, it would be well to bear in mind the old, but invaluable expedient of cording the extremities. Three should be so treated for fifteen minutes and then a rotation kept up for two to three hours. This is as efficacious a mode of depleting the trunk of blood as venesection, inasmuch as it is by no means difficult to cause a patient to faint by this technic, and when the clot is firmly established, the much needed blood can be liberated into the general system. He felt that few civil surgeons could be in the possession of facts which would enable them to speak with authority on the subject of abdominal bullet wounds, but he had collected from some of his former students who had served in Cuba and in the Philippines, a number of data, some of which he presented. Without exception these gentlemen were of the opinion that it is unwise to operate on the field of battle, because it is there impossible to have at hand the most necessary aids to operation—fire and water. They had made very free use of opium and believed that the "morphine splint" is often a most potent factor in averting a fatal outcome.

Dr. Rodman in closing agreed very cordially with Dr. McGraw that the soft parts cannot possible deflect a bullet. Military and civil gunshot wounds have been so absolutely differentiated by the experience of the recent wars that they must henceforth be considered under separate and distinct headings. The military bullet with its nickel casing, its high velocity, its tremendous speed of rotation, its small size and its freedom from infection gives an incised and practically sterile wound. Practically all that is taught concerning the treatment of bullet wounds pertains to the leaden, slowly-moving, dirty septic bullet of civil life.

Case of Unique Foreign Body in Stomach.—Dr. J. C. Oliver of Cincinnati presented a large bottle filled with twigs, shells and seeds, the whole mass weighing half a pound. This he had removed from the stomach of a child ten years of age who had had a gustatory frolic in a persimmon tree eight days previously. The case was interesting because of the pernicious appetite which the child had exhibited and for the absence of any subjective symptoms. Objectively, a large tumor could be felt in the epigastrium. The recovery was uneventful.

Dr. Jacobson of Syracuse reported a case somewhat similar to this in which he had removed almost a pound of hair which the child had chewed off the end of her braid. He supposed at the time that his case was unique, but on looking it up he discovered the records of 20 similar cases. It was interesting to note that none of these children were feeble minded.

Intestinal Anastomosis.—Dr. F. G. Connell of Leadville gave the history of the efforts which have made to advance the diagnostic power of surgery in general and of intestinal perforation in particular. Following in the steps of Senn and others, he had been endeavoring in a series of experiments to find some sure way of proving the existence of intestinal perforation. He had modified Senn's original idea somewhat and injected sterile air or fluid into the peritoneal cavity and endeavored by subjecting it after removal, to various tests, to show the presence of intestinal contents. He had not as yet made any definite progress in this line.

Gall-stones in the Common Duct.—Dr. Martin B. Tinker of Baltimore said that what he wished to report was based on the Johns Hopkins statistics. They show very brilliantly that the success of operation in cases where there have been a permanent lodgment of the stone in the common duct, is far greater than that obtained by any medical treatment. The technic of the operation, however, is still under discussion. Some surgeons prefer a simple cholecystenterostomy, but this has not been done in any of their twenty-seven cases, as it is after all at best a makeshift. No doubt, however, it has a place as a preliminary operation in patients profoundly cholemic. The dislodgement of the stone is also a technic of questionable value. He agreed with Mayo that it is usually a loss of time. Crushing the stone between the thumb and finger had also not been practised at the Johns Hopkins since Dr. Halsted has long felt that Fenger's criticisms of it are very true. None of these methods can be commended, because they do not allow the surgeon to see what he is about. This is important, because in their twenty-seven cases, single stones were found in but six, and the leaving of a stone means a continuance of disability. In all ordinary cases, the operation of choice is incision of the duct with suture and drainage of the passages to the gall-bladder. This has been done on 21 patients, each one of which recovered. He emphasized that in view of this absence of mortality, the operation should in future be practised more freely and at an earlier date. Many of these cases cited have suffered for thirty years with gall-stones and it is only natural that such patients have a less bright outlook and the surgeon a harder task than those who submit themselves to operation at the earliest possible date. In the hands of good operators, these cases, although presenting much greater technical difficulties are no more dangerous than appendectomies.

Surgery of the Gall-bladder and Bile-duct.—Dr. A. H. Ferguson of Chicago said that although pathological conditions naturally give rise to some disturbance of relation, the greatest variation to be looked for in these cases is in the arterial supply. He delved into the anatomy of the parts quite extensively and laid special stress upon the fact that the smallest diameter of the common duct is at the ampulla of Vater. The spiral arrangement of the mucous membrane of the cystic duct prevents the passage of the probe, but not of air or water. He showed a rubber inflater with which he was in the habit of pumping air through the duct into the duodenum. This is a sure and rapid mode of determining their patency without doubt. Traction on the gall-bladder from adhesions cause the greatest displacement of this organ, but the downward dragging is the most pernicious, since it leads to the inspissation of the bile and consequent stone formation. The signs and symtoms of the disease are marked. There is in every case a characteristic gastro-intestinal disturbance. There is also pain. Its characteristic and sudden onset and cessation are valuable diagnostic features. The pyrexia which is present in 50 per cent. of all cases is still enigmatic. The incision for the treatment of biliary complications should be made at the outer border of the rectus and parallel to it. In performing cholecystotomy, the bladder must always be made fast to the upper angle of the wound; otherwise there is apt to develop a permanent fistula. He exhibited a number of exquisite illustrations in the course of his demonstration. Hepatotomy, the operation of Davis, is a technic which may have an important future. It is a simple incision in the lumbar region into the tissue of the liver, whereby in cases of biliary suppression the bile can be drawn away.

Technics.—Dr. Mayo in opening the discussion said that he had given much thought to the problem of exposing the area to view. Mayo Robson had suggested the use of a small pillow beneath the patient and it has been proposed by others to have an assistant lift the parts into view by traction on the liver. He preferred, however, to cut the gall-bladder quite free from that organ. He had found that the separation of adhesions to any great extent was contraindicated. All these operations should be done within an hour. He is in the habit of placing a suture on each side of the stone and uses it after the fashion of a darning-ball in a stocking. There is the utmost necessity of draining hepatic ducts because many patients die from the suppression of liver functions.

Dr. Davis of Birmingham had done 200 experimental operations on the livers and ducts of dogs. He had found it very difficult to execute the technic of choledochorrhaphy, and inasmuch as it does not seem necessary in the human being, he gladly omits it. In every case in which the gall-bladder is removed the cystic duct must be removed also. Hepatotomy was first done by him in a case of liver abscess, and it worked so well that he has conceived of its being valuable in cases of pronounced cholemia.

Dr. Moore of Minneapolis said that local tenderness over the gall-bladder is always a help in diagnosis and is always present. This, combined with abrupt pain, often waking the patient from sound slumber, should cause one at least to think of gall-stones.

Dr. Abbe of New York said that the papers had been of great interest. They had presented for discussion, two very important points, *viz.*, the suturing of the duct and the success of the operation. The first was a procedure attended with the utmost difficulty and lay quite without the bounds of the average surgeon's capabilities. He had given it up some time since and was now quite content to leave the incision to be cared for by the law of stenosis which closes any aperture without peradventure. A small drain from the site of the opening to the surface kept in position for a week by a catgut ligature was all sufficient for safety. He congratulated Dr. Tinker on the magnificent results which he was able to report.

Dr. Weir of New York has also found great difficulty in suturing the duct and now allows it to remain open. He invariably employs drainage and obtains by this technic admirable results. If he has been unable prior to operation to determine the character of the stools, whether they be clay-colored or not, he employs the trick of dropping into the gall-bladder a little pellet of methylene blue which can be anxiously hunted for after the operation.

Dr. Tinker in closing said that although the general voice of the Section was upraised against him, he was still of the opinion that the technic employed at Hopkins was based on surgical truth. It was well known that the bladder and ducts were infected at all times, and the suture was therefore a valuable preventive step.

The operation was rarely of the emergency type and should therefore be referred to a man who could do ideal surgery.

Dr. Ferguson said that he firmly believed the position in which the gall-bladder was placed in the wound was of great importance and had a definite relation to the establishment of permanent fistula. He would drain every bladder rather than remove it, as it drains the liver better than any artificial tubing. He had not sutured the common bile-duct and believed that if infected tissues were approximated they would not hold together.

The Surgical Aspects of Pancreatitis.—Dr. William J. Mayo, of Rochester, Minn., said that the anatomical relationship existing between the biliary and pancreatic ducts causes gall-stone disease to be the most important etiological factor in the production of pancreatitis. The form which the disease takes depends on the extent of the chemical or bacterial invasion of the ducts. The acute form is usually attended by hemorrhages into or about the pancreas, and fat necrosis, involving the omentum, retroperitoneal and mesenteric tissues by preference, and may result in abscess if death does not supervene. The symptoms are those of a most serious lesion involving the upper abdominal zone with repeated attacks of collapse, nausea, vomiting, etc. The chronic form is usually in the nature of an interstitial pancreatitis with enlargement of the organ and jaundice is the most prominent feature. The treatment of the acute form is to sustain life and later drain such accumulations as take place. The treatment of the chronic form is by means of cholecystostomy, in this way draining the ducts. The knowledge of the various forms of the disease has been so largely gained from the dead-house that it is probable that many of the milder cases may have recovered spontaneously, unrecognized.

Dr. Munro of Boston said that although great efforts have been made to discover some reliable laboratory tests for the acute form of pancreatitis, none have as yet been evolved. Diagnosis must rest upon clinical features which are at best very vague.

Appendicitis; a Critical Review of 416 Cases.—Dr. John B. Deaver and Dr. Geo. G. Ross presented this paper. Dr. Deaver said that of the total number 279 had been acute cases. In these he had a mortality of 15 per cent. The whole trend of his magnetic discourse was strongly in the direction of early operation. He said that the surgeon was very rarely given a fair show to operate early. He, rather than the family practitioner, should be the one to decide what symptoms call for surgical help. When the people at large are crying out as a whole for surgical intervention in this dread disease, is it not time that the paretic general practitioner be aroused to a sense of his responsibilities. The ice-bag is fully as bad as opium, in that it masks valuable diagnostic symptoms and does no good. The awful uncertainty which hangs about every case of appendicitis should no longer exist if every case were operated on the moment it is seen. He took strenuous exceptions to the general belief that amelioration of symptoms contraindicates operation. All the miserable sequellæ so potent for evil and so dreaded by all can be avoided by early action.

Nine Fatal Cases of Appendicitis.—Dr. Parker Syms of New York said that the cause of death in these patients had been as follows: Five had perished from rupture of gangrenous appendicitis, no adhesions being present; three had been lost through perforation in the presence of incomplete adhesions; one had died from circumscribed abscess. Death in every case is due to delay. There was no patient upon whom one might not at a certain time have operated successfully. He gave in detail his rules governing appendicular treatment. They divide themselves into the palliative treatment which comprises rest, milk, laxatives and no drugs and into the technic for the interval and acute cases with abscess and general peritonitis. One important point which he brought out was his mode of removing the pus from an abscess. He pricks the wall and absorbs it on a sponge drop by drop. He would often make no attempt to remove the appendix in cases of abscess.

Some Anomalies in Appendicitis.—Dr. Ernest La Place of Philadelphia said that the diagnosis depended first on the location of the appendix. This, as is well known, is capable of extraordinary variations. Second on the extent and position of the pain, third upon the fact that infection is never uniform. Foreign body in the appendix is never the cause of an attack. It is well known that organisms vary constantly in their virulence, and this fact alone explains the endless varieties of the disease. What occult power causes a development of these virulent toxins, no one can say, but that they exist within the lumen of the closed organ and that they possess the corrosive strength of nitric acid, no one doubts. This accounts for the gangrenous type and the toxins are usually of streptococcic production. The colon bacillus gives rise to the less virulent forms. The obliterating type of the disease results as a rule from chronic low forms of irritation which destroy the mucous membrane and cause adhesions at the appendicular orifice. An axiom with which every one should be familiar is that at no time can any human being be sure of the extent of the disease except after operation. Hence, every case should be operated upon at the earliest possible moment.

Dr. Weir of New York in discussing these papers said that he wished to speak of the appendix. He had discovered a new and unique use for the much-abused organ. Recently it had been proposed to perform right colostomy in order to irrigate the colon in certain cases of persistent ulceration. When he was doing one of these operations, the appendix popped into view so invitingly that the happy idea of marsupializing it in the right inguen occurred to him. He sewed it to the abdominal wall, passed a tube into it and injected antiseptics through it. The colitis in this case is cured and he will on his return to New York introduce a cautery into the opening of the appendix which will destroy its mucous membrane, ablate the organ and close the fistula. Turning to appendicitis he said that he agreed with Deaver. He had only reached this conclusion in the past year or more, but he has now reached it for all time. Every case seen must be operated on at once.

Dr. Abbe of New York said that the last chapter in the treatment of appendicitis was evidently not yet settled. He had prepared a number of specimens by distention, fixation and longitudinal section. Without exception all show the presence of a stricture and in 10 per cent. there are concretions. These are not the so-called enterolyths, but consist of exfoliated epithelial cells from the appendicular mucous membrane. The first attack of clinical appendicitis really marks the end of the appendicular disease.

Dr. Gibbons of Scranton said that nervous dyspepsia, colitis and many other conditions are to this day too often confused with appendicitis.

Dr. Ochsner of Chicago said that he had learned more from Deaver than from any other man and that the profession and the world owed him a debt which could never be repaid. When he learned that Dr. Deaver was to speak upon this subject, he gathered from his own hospital statistics of mortality from a similar number of cases as Dr. Deaver had based his report upon. His mortality is somewhat less than 4 per cent. What is it that makes it less than one-third that of the past master Deaver? Nothing, in his mind, except the fact that all his cases were subjected to a treatment which absolutely prevent peristalsis, *viz.*, lavage of the stomach and absolute absence of food and cathartics.

Dr. Murphy of Chicago said that the problem of when to operate in appendicitis is rapidly nearing solution. Practically all the members of the section were agreed that it must be within thirty-six hours. When the general profession shall become educated to this, mortality will be reduced to less than ½ per cent.

Dr. Mayo of Rochester, Minn., wished to be put on record as emphasizing the importance of early operation. This conclusion had not come to him until two or three years ago. He thought that Ochsner's treatment had been instrumental in causing a drop in his mortality from 14 to 4 per cent.

Dr. Deaver in closing thanked the section for the very generous and cordial expressions of commendation. He said that it was difficult for him to explain the difference of his mortality and Dr. Ochsner's except by supposing that they did not have a similar class of cases. The variety of patients which made up the bulk of his death rate were those fellows who came into the hospital with an abscess as big as a baby's head or who were in the profoundest condition of shock from perforation. He believed that no amount of stomach washing or deprivation of food could prevent a fatal outcome in these cases.

(To be continued.)

SECTION ON PRACTICE OF MEDICINE.

FIRST DAY—JUNE 10TH.

The Section was called to order by Dr. Frank A. Jones of Memphis, Tenn., who then read the president's address.

Preliminary Education.—The question of requiring a degree before according permission to enter a medical school is sure to be a source of confusion and does not solve the problem of proper requirements. Shall the degree required be that of A.B. or B.S.? Considering that the candidate is to devote his life to the study of medical science it would seem more suitable to require the degree of B.S. rather than A.B. Entirely too much stress is placed, according to Dr. Jones, on the value of classical or linguistic training for the develment of the mind. The result is that many who have a smattering of Latin and some French or German may not know how to write a decent English sentence. If English training were more insisted on it would in the end be better than the incomplete classical training now given. The requirement should not be for six or seven years of preliminary college work, but for four years of serious high-school training.

Reciprocity of Medical Examining Boards.—Dr. Jones said that the establishment of a national examining board demanded by so many may prove a source of serious danger. The interest at present taken in State medicine and the keeping up of a good standard of medical practice may well degenerate if authority be taken from the local State authorities and centralized at the Capital. What is needed is rather reciprocity of the present State examining boards preserving their idenity and their present influence for the medical profession, yet facilitating interstate practice. This will solve the present difficulties, yet without endangering the benefits of the situation as it has worked itself out up to the present time.

Amebic Dysentery in Michigan.—Dr. George Dock of Ann Arbor, Mich., reported a case of amebic dysentery occurring in a man who had not been out of his home county in Michigan for nine years. The patient was a farmer aged thirty years who had suffered for many weeks with dysenteric symptoms before he came for treatment to the hospital at Ann Arbor. The water the man had taken came from a well about 100 feet away from the barn and there seemed no good reason to suspect any contamination from that source. He began to suffer in August of last year. At first there were griping pains. These were followed by watery discharges and then by tenesmus. He averaged from six to twelve stools a day and sometimes had as many as twenty. He was not free from these watery discharges for more than a day or two in over six weeks and had lost some fifteen pounds in weight.

Condition on Admission.—When admitted to the hospital an examination of the patient's rectum showed some proctitis and the speculum brought away some reddish mucus so typical of amebic diarrhea that Dr. Dock at once suggested the possibility of its presence. The case had come in with the diagnosis simple dysentery. On microscopical examination an abundance of Charcot-Leyden crystals and many active amebæ. For three weeks his condition remained about the same. Once when there was a day without frequent discharges a good dose of Carlsbad salts was given and many active amebæ came away—more than Dr. Dock had ever seen before. There were also a number of eosinophile cells in the stools and 10 per cent. of the white blood-cells were of this type.

Amebic Dysentery in the United States.—In 1891 Dr. Dock described some cases of amebic dysentery seen in Texas. The amebæ seen in this case were of the same type as those seen farther south. Their diameter when at rest in the spherical form was from 20 to 35 micra. Very few were less than 20 micra, only one more than 35 and that only 38 micra in diameter. The blood-serum of this patient was tried to see if the agglutinating property for Flexner's and Chiga's bacillus were present, but it could not be demonstrated. Cultures taken with the greatest care failed to show any growth of this bacillus. This is the first case seen in Michigan, but it is probable that careful search will show many others. A number of cases of dysentery are reported to the board of health of Michigan, but most of these, as Dr. Dock has seen them, are either chronic diarrhea from gastro-intestinal disturbance or are the terminal diarrhea of pernicious anemia.

Amebic Dysentery in Northern Cities.—Dr. Dock said that since Karteli's classic study of amebic dysentery the disease has attracted great attention. It was generally concluded that amebic dysentery was confined to the tropics. It must not be forgotten that the first case of it was described in St. Petersburg. In this country the disease has now been seen in Baltimore, in Philadelphia, in Boston, in New York, and in parts of Texas. It seems evident then that the disease may exist almost anywhere in the country, or probably in the world. It has not been found because not looked for with sufficient care.

Etiological Role of Amebæ.—It has sometimes been said that the presence of the ameba coli was only a coincidence and that the parasite was not etiologically connected with the dysentery. The pathological picture presented by amebic dysentery is too distinct for this to be true. Some authorities have insisted that the ameba was a more or less normal parasite of the intestinal tract. Schubert maintained that he found the ameba coli in the stools of more than one-half of the stools of normal individuals to whom Carlsbad salts had been administered. Dr. Dock has examined the stools of over 200 patients to whom Carlsbad salts had been given but did not find true amebæ. Certain cells that simulate amebæ were found, but they had true ameboid movements and contained no cellular material.

Nomenclature Meddling.—There are many seeming contradictions and there is much confusion in the literature of amebic dysentery. This has been introduced by the desire of every man who studies the question to give new names. These names are given without any zoological reasons. Not new theories of origin nor new names are needed, but more observations. It is clear that there are many cases of amebic dysentery in this country and the disease is very widely distributed. These must be carefully sought for in order to learn the geographical limits of its extension and aid in prognosis. Amebic dysentery is always extremely obstinate to treatment and the discovery of amebæ in the stools is enough to make the physician refrain from any encouragement as to relief of symptoms.

Amebic Dysentery Traveling Northward.—Dr. Mac Rae of Baltimore said that when the first case of amebic dysentery was found in Johns Hopkins, very careful inquiries were made as to the patient's possible connection with things tropical. Now, however, that many cases have been seen there is no question that the disease may occur in those who have never been outside of Baltimore. The disease has been observed especially in children and others who have taken gutter-water or who have had their hands covered with material from the gutters when eating. It would seem then that the frequent amebæ seen in such water have some connection with the pathogenic amebæ.

Tropical Liver Abscess in New York.—Dr. Libmann of New York City said that he had seen at least ten cases of amebic liver abscess at Mount Sinai Hospital in New York, and in most of these the patient had never been out of the city. As the form of ameba that causes liver abscess is also concerned in the production of dysentery it would seem that this parasite may invade the system without any residence in the tropics being necessary.

Amebic Dysentery in New York.—Dr. James J. Walsh of New York City said that at least two cases of true amebic dysentery have been under observation in New York during the past year. In neither case had the patient been out of the city for many years. The disease would seem therefore to have crept as far north in its endemicity as New York.

Amebæ as Albuminous Products.—Dr. Elmer Lee of New York City said that amebæ are undoubtedly the result of imperfect digestion of albuminous material. Under such disease conditions the undigested substances agglomerate in the blood-stream and give the ameboid appearances. The white blood-corpuscles are undoubtedly the products of similar processes. The blood that enters the spleen has not many such agglomerated masses, but the network of splenic tissue undoubtedly causes them to form, for they are found in great abundance in the blood issuing from the organ. These appearances have led to the formation of many hypotheses, but they are evidently due to faults of digestion and can be very clearly traced to these.

Biology of Amebæ and White Blood-cells.—Dr. Thos. Futcher of Baltimore said that it would be unfortunate to leave any such assertion as that of Dr. Lee to pass without contradiction. Amebæ and white blood-cells are living cells and not mere agglomerations of albuminous material. Any one who has seen the active ameboid movements of these cells could ever doubt of their intense and independent vitality. Their capacity for the ingestion of other cells and foreign material is also a proof of such vitality. To see, them actively engaged in phagocytosis is to dismiss all question of the possibility of their being broken-down albuminous products.

In closing the discussion Dr. Dock said that he had been very careful to exclude any possible source of infection from Cuba or the Philippines. In recent years there have been not a few exclusively tropical diseases seen in Michigan as the result of the campaigning in the tropics. Amebic dysentery then seems to have a home in Michigan and very probably also in many other northern States.

Origin of Vesicular Murmur.—Dr. C. F. Hoover of Cleveland said that Laennec had attributed the origin of the vesicular respiratory sound to the friction of the air in the small tubes and its entrance into the infundibulum. This explanation had been disputed. Certain Germans have maintained on theoretical grounds that the vesicular breath sounds are no other than the sounds of the air passing through the smaller bronchi as modified by the intervening lung tissue. Penzoldt attempted to demonstrate this view by covering the human trachea with the inflated lung of a sheep when the tracheal breath sounds beckon, according to him, the character of the vesicular murmur. Dr. Hoover has repeated this experiment, however, and finds nothing in it to confirm Penzoldt's statements. The vesicular and bronchial sounds are evidently of different origin.

Illustrative Case.—Dr. Hoover has recently had a case in a very old man in whom there was very severe spasm of the glottis. With this spasm intense inspiratory efforts occurred. This led to some rarefaction of the air within the lungs and also to some movement of the air toward the periphery of the lung. During this movement the normal vesicular murmur could be heard, though there was no bronchial or tracheal breathing. Dr. Hoover has been able to confirm this observation upon other persons. If a normal individual be asked to close his glottis and then make inspiratory movements this same murmur, although much weaker, can be heard. With the intense inspiratory efforts made in the pathological condition these sounds were easy to hear and seem to demonstrate that the origin of these vesicular inspiratory sounds is a combination of movement of air in the smaller bronchoes and of the movements of the lung tissues themselves in the infundibular areas.

Dr. Quimby of New York City said that the expiration of bronchial breathing is sometimes spoken of as high pitched. As a matter of fact it is really lower pitched than usual.

Blood Poverty and Gastric Ulcer.—Dr. Robert N. Willson of Philadelphia said that the subject of gastric ulcer is one of those most threshed over in medicine. Only one thing in etiology is agreed upon: that anemic conditions and especially chlorosis form the basic predispostion to the affection. Gastric ulcer is much more frequent than has been thought. Five per cent. of all hospital cases suffer from the disease. In ordinary life gastric ulcer may not be so frequent, but there is no doubt that many apparently healthy persons or sufferers from obscure stomach symptoms are really carrying around latent gastric ulcers.

Position of Ulcers.—Gastric ulcers usually occur on the posterior wall near the greater curvature. Mayo Robson said not long ago that latent ulcers occurred especially on the anterior wall and near the lesser curvature. Here they do not readily come in contact with the food. Latent ulcers are, however, quite common. Ulcers on the anterior surface near the lesser curvature are found very rarely at autopsy. Ulcers may be multiple. Even five or six may be exceptionally present. In Virchow's famous case, so often quoted, there were thirty-four. Most multiple ulcers are near the pylorus, some with contiguous edges, yet all having the characteristic punched out appearance that distinguishes the peptic ulcer from all other stomach lesions.

Causes of Ulcers.—Some are due to thrombosis, some to embolism, but these causes are rare compared with the frequency of gastric ulcer. In addition emboli occur at the cardiac end of the stomach. Traumata and tight belts and corsets may be mentioned, but these surely are not sufficient to account for the number of cases that occur. Poverty and intemperance are the main causes. It is evident, that, as a rule, a combination of factors must occur to produce the ulcer.

Treatment of Gastric Ulcer with Iron.—Dr. Willson pointed out that since the underlying condition in gastric ulcer is always poverty of blood the treatment by means of iron should not be so condemned. Albuminate of iron has been used with good results. Dr. Willson detailed the case of a physician's wife who suffered from a painful condition of gastric ulcer, but never had hemorrhage. The absence of hematemesis is not so rare. Boas saw ten cases without this symptom. In 700 reported autopsies nearly 5 per cent. had ulcer, yet had never vomited blood. Dr. Willson's patient improved at once when her anemic condition was relieved and has had no relapse of symptoms.

Gastric Ulcer and Stomach Motility.—Dr. Fenton B. Turck of Chicago said that besides blood defects as the underlying condition and more important than secretory anomalies disturbances of motility must be considered. The other important factor is interference with splanchnic circulation. Dr. Turck has kept animals in very small cages in which they scarcely had room to turn around. Under these circumstances they lost weight and in at least two of the survivors ulcers resembling the ordinary peptic ulcers were discovered.

Dr. J. J. Walsh of New York said that trauma in anemic cases seems to form the direct causative element of the gastric ulcer. In cooks the traumatic cause is hot food; in seamstresses, the vibration of a sewing machine against which they lean; in typewriters the machine, in clerks the desks against which they lean. Dr. Walsh has seen two cases of gastric ulcer in men. One was a shoemaker who cut sole-leather while the piece was pressed against his stomach. In the other, a carpenter, the man leaned against a chisel while smoothing boards. Old corsets seem to act in this same way. Dr. Favil of Chicago said that the lack of hemoglobin is the always present element in causation. Feeding *per rectum* is then an unsatisfactory form of treatment, and the first thing should be the correction of the anemia. Iron is then not contraindicated, as used to be said, but should be used judiciously.

(To be continued.)

SECTION ON OBSTETRICS AND GYNECOLOGY.

First Day—June 10th.

The Address of the Chairman.—Dr. J. H. Carstens of Detroit dealt with the future of gynecology. The obstetrical part of program is short, as the questions of that branch are practically settled. Nature needs no help in the majority of cases and the dangers of a physiological confinement are now practically *nil*, hospitals reporting large series of cases, in one instance reaching 1900, without a death. Gynecological discussions of the past on leeches, tampons, iodine, specula, etc., have given place to papers on the mechanics of the surgery of the pelvis, the removal of tumors and the uterus and tubes, conservative surgery of the uterus is fortunately now in vogue. But the general practitioner attends labor cases and the general surgeon is claiming the operations of gynecology; hence it might seem that a few years more would see the end of this section. However, other questions than those of mere operating demand attention. The increasing sterility of American women demands attention. Some of the causes of the decrease in birth-rate were enumerated. Numerous young married women use every means to prevent conception for a time and thus destroy the power which they would fain possess, at a later period. Mothers aid their daughters in this practice. Physicians must see that a higher standard of womanhood is inculcated. The educational methods of to-day are another cause of sterile and invalid women. The child is urged to the limit of ambition in mental acquirements. Insufficient sleep, lack of exercise, and over-study result in a partially educated mind and a wrecked body, neurasthenia and hysteria follow. Young men of vigorous constitution marry these educated, probably passionless, women and trouble ensues. The outcome is often infidelity, contraction of disease and transmission of it to the wife, with the result that the gynecologist's services are required. This great problem of future education must be solved.

Prostitution.—Prostitution must be controlled, legally if in no other way. Moral conditions must be understood by the physician and then taught to the public. Young women are driven to the unhealthy occupations of clerks, stenographers, etc., by averseness to marry any but rich men. This idea must be dispelled. A pernicious practice to be stopped is that of suggestion to girls regarding menstruation. Women ask them regarding irregularities, or even the lack of them, until a morbid condition is aroused and real or fancied trivialities are multiplied with disastrous results. Right living, physiology, exercise, etc., are needed by women. The future gynecologist must live closer to his patients, he must enforce the idea of a sound body; he must make people understand that not every girl was born to get a higher education, whatever her powers may be. He must study the condition of the individual and be a guide to the race.

The Best Method of Surgical Treatment of Complicated, but Aseptic Retroversion of the Uterus in Fruitful Women.—A. Goldspohn of Chicago advocated the Alexander operation, although this procedure has been changed until now that name is really a misnomer. He reported 80 cases, 11 being his own, operated upon by this method and examined, by various operators after a subsequent labor. There were only 2 recurrences and in each of these there were complications to account for the condition. This "double test of pregnancy" is the severest test and the Alexander operation is the only one that successfully stands it. None of the methods of suspending the uterus by the formation of artificial ligaments should be used in women who may conceive. The only proper question for discussion is how to use the round ligaments to obtain the most ideal result. Considering the fact that retroversion never caused death and that surgical is not the only, although the best, treatment, any operation should be as slight as possible, not dangerous, and should yield permanent results. These requisites are furnished by the method advocated. Any method except that through the abdominal canal from without reduplicates the strong median portion of the ligament. The Alexander operation eliminates the weak distal end of the ligament, thus securing anatomically correct shortening. If conditions within the pelvis, all inflammation being past, demand interference, the inguinal canal and internal abdominal ring will admit the passage of a finger, without additional cutting, for the purpose of freeing adhesions or delivering the adnexæ for reconstructive treatment or partial removal. This has been done in over 200 cases. The operation is without mortality, it does not invite hernia; its results favor conception and do not interfere with pregnancy or labor, and, as before stated, the recurrence of retroversion is less than after any other operation.

Surgical Treatment of the Uterosacral Ligaments Through the Vagina in Retroversion of the Uterus.—J. Wesley Bovée of Washington is inclined to believe that retroversion *per se* is a condition requiring operation, although that question is not yet settled. The treatment advocated is not original with him, other operators working on the same line more than fifty years ago. Brief reference was made to the parts played by the various ligaments in uterine support. The round ligament has a very small part, its main function being to pull the uterus forward after the emptying of the bladder. The location in which the cervix perforates the pelvic diaphragm, anterior or posterior, has much to do with displacements of the uterus. The anatomy of the parts, especially of the utero-sacral ligaments, was briefly explained. These ligaments have a marked influence in retaining the cervix within the hollow of the sacrum and when this condition obtains there is no retroversion of the uterus. Hence the operation recommended—shortening of the utero-sacral ligaments to correct retroversion. This is best accomplished through the vagina, the peritoneum being opened or not owing to the exigencies of the case. If there are pelvic adhesions, the cul-de-sac is entered. Suture material is an important item in this operation, Bovée preferring kangaroo tendon which will last for several weeks. When the peritoneum is not incised the danger is slight. Of 91 cases reported nearly all were successful, there being no failure in the 8 operated on by the author.

In the discussion Dr. G. Kolischer of Chicago raised the point of danger from operating so near the peritoneum without opening it, the knife or needle being apt to penetrate the intestine.

Dr. J. Riddle Goffe of New York said that everyone should now come to the conclusion that ligaments are the support of the uterus. Ventrosuspension is not favored, because the artificial band has no muscle tissue and does not increase in size and involute. The round ligaments do not support the uterus, but act more like guy ropes to retain it in place. The true support is the tissue made up of the uterosacral and uterovesical ligaments and they should be used to correct the position of the uterus. He has operated upon the uterosacral ligaments in three cases, at the same time shortening the round ligaments through the vagina. Satisfactory results, even after pregnancy, were secured in each case. Silk was used for sutures, the peritoneum being opened in each case.

Dr. A. Palmer Dudley of New York considers retrodisplacement a direct cause of pelvic disease, including extra-uterine pregnancy. In his experience ventrosuspension has proven a safe and satisfactory operation. It does not interfere with the dynamics of the pelvis. A perfect ligament can be formed out of the peritoneum when the uterus is suspended and it does not interfere with pregnancy. He has long since abandoned the Alexander operation. It is useful only in patients who have no adhesions; in the great majority of cases old enough to produce symptoms adhesions are present.

Dr. J. H. Carstens spoke of two conditions which modify the operations needed, one is that of general ptosis of abdominal viscera pushing down the uterus, the other being lacerations, etc., affecting it from below.

Dr. Goldspohn refuted the statement that the round ligament operation was applicable only to simple cases. Adhesions can be detached by the method he uses the same as by the abdominal incision.

Dr. J. W. Bovée has no fear of wounding the intestines during operation and would not open the peritoneum unless internal conditions demanded.

Electrothermic Hemostasis.—Dr. A. J. Downes of Philadelphia reported a series of cases operated upon by this method during the past year, thus supplementing his previous paper on the subject. The cases included 4 ovariotomies, 20 of salpingectomy, 42 appendectomies, 5 removals of hemorrhoids. Of the hysterectomies 5 were vaginal, and all were practically bloodless. Many of the pelvic cases were suppurative, but the abdomen was closed without drainage. This was also done in cases of suppurative appendicitis, in at least 2 of which the appendix was perforated. No sepsis followed. Strong claims were made for the use of this method in operations for uterine cancer, salpingitis and extra-uterine pregnancy, its ideal use being in the sterile occlusion of the appendicular canal. Less pain follows abdominal operations by this method and fewer adhesions are formed. Improved instruments were exhibited.

An Operation for the Cure of Rectovaginal Fistula.—Dr. A. Palmer Dudley of New York supposed the operation to be original with him until later a description of the same method by Segond of Paris, was found. The latter's description of the operation was read. The operation is practically that of Whitehead for hemorrhoids, the wall of the rectum being well separated from the vagina. When the mucous membrane is pulled down after resection, the opening in the rectum is disposed of and that in the vagina is easily closed. Dudley, in cases of high fistula, does not resect the mucous membrane entirely to the fistula, but far enough only to permit of sliding the opening on to healthy tissue. Very satisfactory results were secured in 2 cases.

(To be continued.)

GENERAL SESSION.

THIRD DAY—JUNE 12TH.

The following named gentlemen were nominated and elected officers of the association to serve for one year: Frank Billings, M.D., of Chicago, President; W. A. Witherspoon, M.D., of Chicago; G. F. Comstock, M.D., of Saratoga; C. R. Holmes, M.D., of Cincinnati, Vice-Presidents; George A. Simmons, M.D., of Chicago, Secretary; H. P. Newman, M.D., of Chicago, Treasurer; E. E. Montgomery, M.D., C. L. Johnson, M.D., A. R. Wright, M.D., Trustees; and Drs. C. P. Marvil, G. Cook, N. S. Davis, Jr., T. C. Martin, J. B. Roberts, F. H. Wiggin and S. Paton, members of the Council.

BOOKS RECEIVED.

The MEDICAL NEWS *acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the* MEDICAL NEWS *will shortly appear.*

THE STUDY OF THE PULSE, ARTERIAL, VENOUS AND HEPATIC, AND OF THE MOVEMENTS OF THE HEART. By Dr. James Mackenzie. 8vo, 321 pages. Illustrated. The Macmillan Company, New York.

THE PRACTICAL MEDICINE SERIES OF YEAR-BOOKS. Vol. V. Obstetrics. Edited by Drs. R. Peterson and H. F. Lewis. 12mo, 233 pages. Illustrated. The Year-Book Publishers, Chicago.

THE ROENTGEN RAYS IN MEDICINE AND SURGERY. By Dr. Francis H. Williams. Second Edition. 8vo, 704 pages. Illustrated. The Macmillan Company, New York.

INTERNATIONAL CLINICS. Twelfth Series. Vol. 1, 1902. Edited by Dr. Henry W. Cattell. 8vo, 306 pages. Illustrated. J. B. Lippincott Company, Philadelphia.

THE PRINCIPLES OF BACTERIOLOGY. By Dr. A. C. Abbott. Sixth Edition. 8vo, 641 pages. Illustrated. Lea Brothers & Co., New York and Philadelphia.

THE MEDICAL NEWS.
A WEEKLY JOURNAL OF MEDICAL SCIENCE.
VOL. 80. NEW YORK, SATURDAY, JUNE 21, 1902. NO. 25.

SPECIAL ARTICLE.

THE RELATION OF YALE TO MEDICINE.[1]

BY WILLIAM HENRY WELCH, M.D., LL.D.,
OF BALTIMORE.

On this fourth Jubilee of Yale University, speaking, as I trust I may, in behalf of many hundreds of physicians who have received their liberal or professional education in this institution, I bring affectionate greetings to our Alma Mater, and offer our hearty congratulations on this happy anniversary. With all the sons of Yale we join in the prayer of President Stiles: "Peace be within thy walls, O Yale, and prosperity within thy palaces."

Yale is related to medicine most directly through her Medical Department, but also through all who have studied here and subsequently practised the art or cultivated the science of medicine. The Medical School, although the first department added to the College, was not established until over a hundred years after the foundation of the Collegiate School at Saybrook. From the beginning, however, graduates of the College are to be found in the ranks of medical practitioners, and any account of the relation of Yale to medicine would be most incomplete without some consideration of the alumni of the eighteenth century who were physicians. Their history makes a large part of the medical history of Connecticut during that century, but it is not limited to this State.

EIGHTEENTH CENTURY.

Doubtless the student of universal medical history, who, after tracing the wonderful development of medicine in the century of Harvey, Malpighi and Sydenham, is engaged in following medical progress through the eighteenth century, marked by such names as Boerhaave, Haller, Morgagni, and Hunter, would not turn aside long to note what the physicians of Connecticut or indeed of any part of America were doing at that time. Still the records of these early Yale physicians have the interest incident to the beginnings of things which have become important, and for us the special and sympathetic interest which belongs to the annals of family and country.

When the first physicians who had received their collegiate training at Yale appear upon the scene early in the eighteenth century, the state of medicine in this country had not advanced materially beyond the primitive condition of the early colonial days. We encounter, as in the early history of medicine everywhere, three classes of medical practitioners: the priest-physician, the regular physician educated and practising according to the recognized standards of the day, and the empiric or charlatan. What Cotton Mather called "the angelical conjunction" of the cure of the soul and of the body was to be found most frequently and in its best type in New England. Here the regular training of physicians was almost wholly by apprenticeship for three or four years to some practitioner of repute. As vividly portrayed by a Connecticut physician: "The candidate 'served his time,' as it was then called, which was divided between the books on the shelf, the skeleton in the closet, the pestle and pill-slab in the back room, roaming the forests and fields for roots and herbs, and following, astride of the colt he was breaking, the horse which was honored with the saddlebags."

Nor was this condition very materially changed during the eighteenth century by the founding of the Medical Departments of the College of Philadelphia (now the University of Pennsylvania) and of King's College (now Columbia) in the decade before the Revolution, and of those of Harvard in 1783 and of Dartmouth in 1797. During this century only two graduates of Yale College (John A. Graham, Y. 1768, and Winthrop Saltonstall, Y. 1793) had received a medical degree in course. The number of students from the New England colonies who resorted to the medical schools of Edinburgh, London, or Leyden was extremely small, much smaller than that from the Middle and Southern colonies.

With the exception of a law passed in New York in 1760 and a similar one in New Jersey in 1772, there was no effective legislative control of medical practice in any of the colonies. Anyone who chose could practise, and the root-doctors and Indian doctors of Connecticut had their counterparts elsewhere. More from the sparseness and poverty of the population than from the absence of disease the remuneration from medical practice was so small that the physician often added some other occupation, most frequently agriculture, to the practice of his profession.

There were no hospitals, except pock-houses, and practically no medical organization. There was little opportunity for intercourse and interchange of views between physicians in different parts of the country, so that local peculiarities of practice were more common then than now. The only text-books were European, the most authoritative on medical practice being the works of Sydenham and of Boerhaave, later also of van Swieten, Mead, Huxham, and Cullen. There was no American medical journal until near the end of the eighteenth century.

With two or three exceptions the few original medical publications, mostly short pamphlets, by American physicians before the Revolution contained scarcely any personal observations of importance, so that the names of these physicians are remembered to-day by their reputation among their contemporaries and their influence upon their successors rather than by any actual contributions to medical knowledge.

After this necessarily brief statement concerning some of the conditions of medical practice in the New England colonies, we are better prepared to appreciate the position and work of those graduates of Yale College in the eighteenth century who became physicians.

The course of studies at the College was planned rather for the preliminary training of ministers than of doctors, but it furnished a classical education, which was then more necessary for the study of medical books than it is to-day. There seems to have been at least some interest in the College in medical knowledge, if one may judge from the titles of some of the early theses and from the possession by the College of a human skeleton and "paintings of the human body skin'd," as they are inventoried. President Stiles occasionally delivered a lecture on medicine, and in his recently published "Literary Diary" he gives an interesting outline of one of these lectures, the main headings being I. Anatomy, II. Pathology, and III. The Methodus medendi (one of the subheadings here being "Efficacious Medicines but few")—sufficiently comprehensive, it may be said, for a single lecture even in those days. The success attained by the Yale physicians of the eighteenth century indicates that the College then, as ever since, supplied its graduates with a training of mind and character adapted to the circumstances of time and place, and fitting them for the work of life in any field.

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[1] An Address delivered at the Two Hundredth Anniversary of the Founding of Yale College.

Mainly by the aid of Professor Dexter's two invaluable volumes of "Biographical Sketches of the Graduates of Yale College," covering the period from 1701 to 1763, and a kind personal communication relating to the remaining classes, I have been able to determine that there were at least 224 Yale graduates in course of the eighteenth century who practised medicine. This figure, which is certainly somewhat below the correct one, is 9.7 per cent. of the entire number of bachelors of arts for the same period—a percentage about the same as the corresponding one for the nineteenth century. Of the seven graduates in arts from the College in the first two decades of the eighteenth century who became medical practitioners, all, with one exception, were also clergymen, and of the seventy-two physicians graduated in arts in the first half of the century nearly one-fourth were clerical, whereas after this there are only a very few names of clerical physicians.

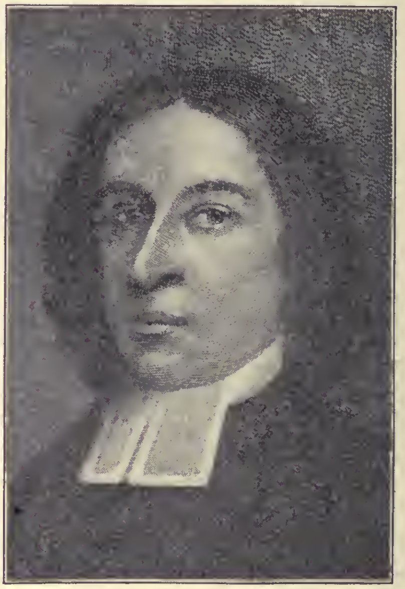
Nathan Smith, M.D.,

PROFESSOR OF THEORY AND PRACTICE OF PHYSIC, OF SURGERY AND OF OBSTETRICS, 1813-1829.

All who are familiar with the early colonial history of New England know what an interesting class the clerical physicians were. Not a few of them were educated, skilful physicians, who ranked among the leading practitioners and teachers of medicine in their day, while others were, on the medical side, scarcely more than "comforters of the sick," as they were sometimes called, rather than active practitioners. One of the earliest and most celebrated of this class of physicians was the Rev. Thomas Thacher (1620-1678) of Boston, the direct ancestor of our own honored and beloved Latin professor of the same name. His name is preserved in medical annals as that of the author of the first solely medical publication in America, a broadside folio which appeared in Boston in 1677 and is entitled: "A brief rule to guide the common people of New England how to order themselves and theirs in the small pocks or measles."

But of all those who combined the offices of clergyman and physician, not one, from the foundation of the American colonies, attained so high distinction as a physician as Jared Eliot of the Class of 1706, who was the first graduate of Yale College to enter upon the practice of medicine. His name is preceded in the triennial catalogue by that of Phineas Fiske of the Class of 1704, who was eminent both as a divine and as a physician, but whose shorter professional career did not begin until five or six years after that of Eliot.

The name of Jared Eliot is a worthy one to lead the long line of over 2,300 physicians who have received their liberal or professional education at Yale College. The grandson of the Rev. John Eliot, the Apostle to the Indians, he spent his long, two-fold professional life of fifty-four years in the town of Killingworth (now Clinton) in this State, where he succeeded in the ministerial office his teacher, Abraham Pierson, the first rector of this College. Of fine bodily presence and engaging personality, for many years an influential trustee of Yale College, the library fund of which was started through his bequest, the friend and correspondent of Benjamin Franklin, Bishop (then Dean) Berkeley, and other learned men, a fellow, it is said, of the Royal Society, and recipient of a gold medal from the London Society of Arts, accounted in his day an excellent botanist, chemist and practical and scientific agriculturist, Eliot, as is stated by Dr. James Thacher in his American Medical Biography (1828), "was unquestionably the first physician of his day in Connecticut," and in chronic complaints "he appears to have been more extensively consulted than any other physician in New England, frequently visiting every county of Connecticut, and being often called in Boston and Newport." It is also said of him that "for forty successive years



Rev. Jared Eliot, M.A., (Harv.),

FELLOW OF CORPORATION OF YALE COLLEGE, 1730-1763. THE FIRST GRADUATE OF YALE COLLEGE WHO BECAME A PHYSICIAN. BORN 1685, GRADUATED 1706, DIED 1763.

he never omitted preaching either at home or abroad, on the Lord's day." With evidences of such manifold activity one is prepared to accept the statement in his funeral sermon: "Perhaps no man slept so little in his day, and did so much in so great variety."

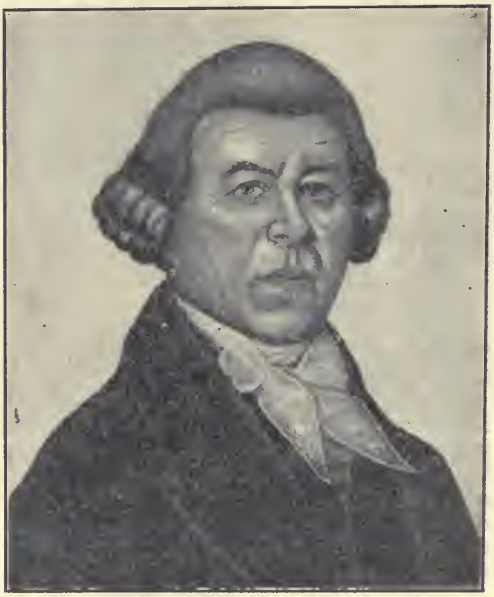
It is customary to speak of Jared Eliot as "the father of regular medical practice in Connecticut," and when one considers the number of physicians who were trained under him, and that among these were such leaders of the profession and successful teachers of medicine as his son-in-law and successor in practice, Benjamin Gale (Yale 1733), and Dr. Jared Potter (Yale 1760), the title seems justly conferred.

Among other clergymen noted in their day as medical practitioners may be mentioned Eliot's classmate, Jonathan Dickinson, the first President of Princeton College, whose paper published in 1740 entitled "Observations on that terrible disease, vulgarly called the throat distemper" is the first medical publication by a graduate of Yale College, and the third on diphtheria by an American; Benjamin Doolittle, Yale 1716, of Northfield, Mass., "well skilled in two important arts," according to his epitaph; Timothy Collins, of the Class of 1718, traditions of whose practice are still current in Litchfield County; Isaac Browne, of the Class of 1729, an early member of the New Jersey Medical Society, the first State Society organized in this country; Moses Bartlett, 1730, the pupil and son-in-law of Phineas Fiske, described on his monument as "a sound and faithful divine, a Physician of Soul and Body," and the father of a son of the same name, graduated in 1763, who was one of the last of the clerical physicians; Dr. John Darbe, of the Class of 1748, who received the honorary degree of M.D. from Dartmouth in 1782, and is the first graduate of Yale College to become Doctor of Medicine; and Manasseh Cutler, Yale 1765, skilled in medicine as well as in many other arts.

The first non-clerical physician in the list of graduates is Jeremiah Miller of the Class of 1709, who settled in New London. He seems, however, to have been more engrossed with other occupations than with medicine, so that Professor Dexter names John Griswold of the Class of 1721, of Norwich, Conn., as "the earliest graduate of the College who devoted himself exclusively to the profession of medicine."

Among the two hundred and more eighteenth century graduates of Yale whose principal or sole professional occupation was medicine are to be found the names of many physicians whose memories are preserved, and of whose useful lives and faithful service in their calling this College may justly be proud. Some were among the most influential and widely known medical men of their time and country. Such were Alexander Wolcott (1731), whose scholarly attainments in medicine are attested by the interesting collection of his books still preserved; Benjamin Gale (1733), one of the few pre-Revolutionary American physicians who have left published records of valuable medical observations; Leverett Hubbard (1744), corporator and first president both of the New Haven County Medical Society and of the Connecticut Medical Society, for many years the recognized head of the profession in this city and county; Eneas Munson (1753), successful, able and learned, one of the longest-lived and most remarkable physicians of his day, the first name in the medical faculty of the Yale Medical Institution; Jared Potter (1760), described by Dr. Bronson as "the most celebrated and popular physician in this State" in the first decade of the nineteenth century; Mason Fitch Cogswell (1780), one of the "Hartford wits," before the arrival of Nathan Smith the most distinguished surgeon in this State, whose name has a permanent place in the history of surgery; Eli Todd (1787), the first superintendent of the Retreat for the Insane at Hartford, who is honored by humanitarians and physicians alike as "the first in this country to introduce the more humane methods of care and treatment of the insane;" John Stearns (1789), Professor of Medical Theory and Practice in the College of Physicians and Surgeons, Western District of New York, President of the New York State Medical Society, who has the credit of first calling the attention of the medical profession to the use of ergot in obstetrics, and Thomas Miner (1796), whose ingenious and erudite essays on fevers and other medical subjects, written partly in conjunction with Dr. Tully, attracted wide attention and much comment both in this country and Europe. To those familiar with this period of American medical history, particularly in Connecticut, other names will occur which might with equal propriety be mentioned, did time permit.

Some who belonged to the medical profession are better known as holders of high public office and for their services to their country than as physicians. Of the five medical signers of the Declaration of Independence, two were graduates of Yale, both in the Class of 1747—Oliver Wolcott, Governor of Connecticut, who studied medicine with his brother Alexander, already mentioned, and practised for a short time in Goshen in this State, and Lyman Hall, the first Governor of the independent State of Georgia, where he followed his profession with marked success. Nathan Brownson of the Class of 1761, who was Governor of Georgia, a member of the Provincial Congress and of the Continental Congress, and the holder of other high public offices, was likewise a practising physician and was appointed by Congress Deputy Purveyor of Hospitals and later to the charge of the Southern Hospitfals in the Revolutionary War.



Eneas Munson, M.D.,
PROFESSOR OF MATERIA MEDICA AND BOTANY, 1813-1826.

The importance of the services of Yale graduates as surgeons and surgeon's mates in the French and Indian War and the Revolutionary War is not to be measured only by the passing mention which I find it possible to give to them here. I have found the names of ten graduates who served in a surgical capacity in the former war, headed by the doughty clerical physician, Timothy Collins (1718), the first Yale army surgeon.

In 1776 the General Assembly of Connecticut appointed a committee of eighteen of the leading physicians of the State to examine candidates for the positions of surgeons and surgeon's mates in the Continental Army, and some idea of the standing of Yale graduates then in medical practice in Connecticut may be gained by the facts that this Committee was headed by Alexander Wolcott and contained ten graduates of the College.

The earliest Yale graduate who held a commission in the American Revolution was a physician, Joshua Babcock of the Class of 1724, Major General of the Rhode Island militia. He had walked the hospitals in London in 1730, being the first graduate of the College to study medicine in Europe, and for nearly twenty-five years was an active practitioner in Rhode Island. Mr. Henry P. Johnston's book, "Yale and Her Honor Roll in the American Revolution," gives the records of twenty-three graduates who served as surgeons or surgeon's mates in this war, and of six other physicians who were officers in the army.

The first bestowal of the degree of Doctor of Medicine in America was by Yale College in 1723, when Dr. Daniel Turner, a well-known London physician and voluminous medical writer received the honorary degree. The first American medical degree in course was given by the College of Philadelphia, now the University of Pennsylvania, in 1768. The first graduate of Yale College to receive a medical degree in course was John Augustus Graham of the Class of 1768, who was graduated Bachelor of Medicine from Columbia in 1772, and the first to be admitted to the Doctorate of Medicine in course was Winthrop Saltonstall of the Class of 1793, M.D. Columbia, 1796.

There are certain directions in which Yale graduates during the eighteenth century especially contributed to the improvement of medical conditions in this country, an improvement everywhere slow and well marked only after the Revolution.

The Yale physicians of the eighteenth century, with a few not very important exceptions, which I have mentioned in a note,[1] were trained at home and were thrown in unusual degree upon the results of their own experience. While in the main their practice is not known to have differed from that which prevailed at the time, there is evidence of some local peculiarities. There developed early in Connecticut that special interest in the indigenous materia medica, which, transmitted in direct succession from Jared Eliot, through Benjamin Gale, Jared Potter, and Eneas Munson, became a distinguishing characteristic of Eli Ives and William Tully, the professors of materia medica and therapeutics in the Yale Medical Institution in its early years. This contributed to a less violent system of treatment of diseases than was customary in those days. Even in early colonial days a mild treatment of fevers prevailed in New Haven, according to Hubbard, who, in writing of this town in his History of New England, recorded that: "The gentle conductitious aiding of nature hath been found better than sudden and violent means of purgation or otherwise; and blood-letting, though much used in Europe for fevers, especially in the hotter countries, is found deadly in this fever, even almost without exception." In all probability the unusual success achieved by Benjamin Gale and certain other Connecticut physicians in the inoculation and treatment of small pox is to be attributed to the mild, cooling and open treatment which they adopted rather than to the preliminary mercurial treatment to which they ascribed it. These tendencies, for they were only such, did not find their full expression, however, until the appearance of Nathan Smith's work on Typhous (typhoid) Fever in the next century.

Connecticut physicians were pioneers in the work of organization of the medical profession, and in this work graduates of Yale were prominent. The oldest existing medical society in this country is the still active and flourishing Litchfield County Medical Society, founded in 1765 and preceded only by two short-lived voluntary organizations, one in Boston and the other in New York.

The first organized effort on the part of the profession to secure effective legal regulation of medical practice in the colonies was in 1763 when physicians of Norwich, Conn., petitioned the General Court for an act of incorporation, which was, however, not granted. The name of Elisha Tracy of the Class of 1738 appears among the signers of this interesting memorial. This first unsuccessful attempt was the beginning of a series of efforts which, largely through the initiative of the Medical Society of New Haven County, organized in 1784, resulted in the incorporation of the Connecticut Medical Society in 1792. In the meantime State medical societies had been formed in New Jersey (organized in 1766, incorporated in 1790), Massachusetts (1781), Delaware (1789), and New Hampshire (1791).

The charter of the Connecticut Medical Society is, in most respects, an admirable instrument, and, as regards the organization of State medical societies, historically almost as interesting as the famous Connecticut constitution of 1639. It embodies in a simple and practical fashion democratic and federative principles of organization and government resembling those adopted by the Commonwealth, and remains to this day a model for similar societies in other States. Of those concerned in the establishment of this society graduates of Yale were the most active and influential, and they composed over one-third of the charter members. The first president was Dr. Leverett Hubbard (Y. 1744), and upon his death Dr. Eneas Munson (Y. 1753) was chosen his successor and held the office for seven years.

The most noteworthy contribution to medical literature before the Revolution by a graduate of Yale was Benjamin Gale's (Y. 1733) Historical Memoirs Relating to the Practice of Inoculation for the Small Pox, in the British-American Provinces, Particularly in New England, published in 1675 in the Philosophical Transactions of London. This creditable and historically interesting paper attracted attention both here and abroad, chiefly on account of its advocacy of the mercurial treatment before inoculation. It may be here mentioned that one of the most valuable of the Yale bicentennial publications, the Literary Diary of President Ezra Stiles, edited by Professor Dexter, contains some interesting historical matter upon this subject of mercurial inoculation, as indeed it does upon a number of other subjects of medical interest.

After the War of Independence we find in American medical writings greater productiveness and originality than before, attributable largely to the increased medical and surgical experience gained during the war and to the higher degree of self-reliance engendered by the political conditions.

The first original separate medical work in this country after the close of the Revolutionary War was the volume published in New Haven in 1788 entitled "Cases and Observations by the Medical Society of New Haven County in the State of Connecticut." This publication, which contains twenty-six papers reporting cases of disease and autopsies, is an event of importance in American medical bibliography, not so much on account of the intrinsic value of the communications, although several are interesting, but because, in evidence of the newly awakened medical life of the young republic, there is collected here for the first time a series of independent, original observations and studies by different American physicians. Nothing of the kind had appeared before in this country. One-third of the contributors to this volume are graduates of Yale.

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[1] The notes accompanying this address are omitted from this publication.

Nine years later, in 1797, was started the first American medical journal, *The Medical Repository*, published in New York, and its projector was the talented and scholarly Elihu Hubbard Smith of the Class of 1786, with whom were associated Dr. Samuel L. Mitchell and Dr. Edward Miller. Dr. Smith, the father of American medical journalism, died much lamented the following year. Although so young, he was physician to the New York Hospital, the editor of several works, and a contributor to literary periodicals as well as to his own journal, in which his scholarly papers on the plague of Athens and the plague of Syracuse can still be read with pleasure and profit. The establishment of *The Medical Repository*, which was continued until 1824, was of great service in promulgating medical knowledge and stimulating medical thought and writing in this country at the close of the eighteenth and in the early years of the nineteenth centuries.

The graduate of Yale, however, whose published contributions in the eighteenth century are of the greatest permanent value to medicine was not a physician, but was that useful and versatile man, Noah Webster, of the Class of 1778. Noah Webster is the first epidemiologist which this country has produced. In 1796 he published A Collection of Papers on the Subject of Bilious Fevers, Prevalent in the United States for a Few Years Past, and in 1799 appeared in two volumes a work, well known to all students of epidemiology, entitled A Brief History of Epidemic and Pestilential Diseases, which is of unusual interest, and on account of its records and observations of epidemic diseases in this country has an enduring value. There are scattered papers by him on various medical subjects, and one of these buried in *The Medical Repository* (Second Hexade, Vol. II.) should be rescued from forgetfulness. In this critique of Erasmus Darwin's theory of fever Noah Webster gives a well-reasoned, clear and definite presentation of that modern theory associated with Traube's name, which explains febrile elevation of temperature by the retention of heat within the body.

NINETEENTH CENTURY.

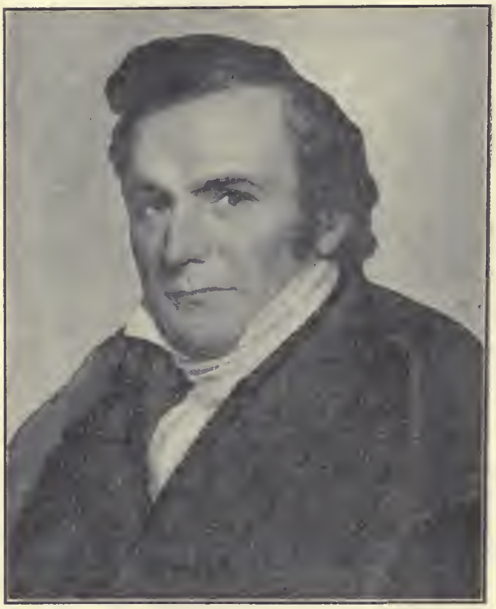
With the turning of the century Yale College, under the guidance of the first President Dwight, passed not only in name but also in spirit from the eighteenth to the nineteenth century. It was transformed from a local to a national institution, and it entered upon a new era of expansion in which seeds were planted destined in the natural course of development to grow into the spreading tree of a University. The first fruit of this new University idea was the establishment of the Medical Department, some account of which will now engage our attention.

The need at that time of a medical school in this place is apparent from the fact that only eight or nine graduates of the College before the foundation of the Medical Department in 1810 had received a medical degree in course, although a much larger number had spent a year in study at a medical school.

A part of the plan proposed in 1777 by a Committee of the General Assembly to enlarge Yale College, provided a Board of Civilians was added to the Corporation, included the establishment of professorships of medicine and of law. In the same year Dr. Stiles, before his entrance upon the duties of the presidency to which he had been elected, "drafted a plan of an University, particularly describing the Law and Medical Lectures," to be laid before the Committee of the General Assembly. These negotiations were at the time unsuccessful, and when at last in 1792 the closer union between the State and the College was effected, these early proposals had dropped out of sight.

In two respects the circumstances attending the establishment of the Yale Medical Department are of peculiar interest. The initiative came from within the College and not from without, and the form of union between the College and the Connecticut Medical Society is something unique in the history of medical schools.

The idea of founding a Medical Department connected with the College unquestionably originated with President Dwight and was a part of his plan for extending the scope and usefulness of the institution. This broad-minded man was, as is well known, much interested in natural science, and he considered in his writings several matters of medical interest. One of the letters in his "Travels in New England and New York" contains an argument, really remarkable in the light of our present knowledge, in support of his conclusion that malaria is caused by minute living organisms.



ELI IVES, M.D.,

ADJUNCT PROFESSOR OF MATERIA MEDICA AND BOTANY, 1813-1820; LECTURER ON DISEASES OF CHILDREN, 1820-1829; PROFESSOR OF THEORY AND PRACTICE OF MEDICINE, 1829-1852; EMERITUS, 1853-1861.

It is clear from several passages in the autobiographical reminiscences published in Professor Fisher's "Life of Benjamin Silliman" that at the time of Professor Silliman's appointment to the chair of Chemistry and Natural History in 1802, a Medical Department was definitely contemplated, and that his appointment was regarded as an important step toward that end. The plan had from this time the hearty sympathy and active support of Professor Silliman. "Expecting," as he says, "from the first to be ultimately connected with a medical school in Yale College," he attended both in Philadelphia and in Edinburgh, where he had gone mainly for chemical study, courses of lectures upon anatomy, materia medica, botany, and theory and practice of medicine, coming under the influence of such famous medical teachers as Wistar and Barton in the former city and James Gregory and John Barclay in the latter.

For centuries the medical departments of universities were the home of all that there was of chemistry and of other branches of natural and physical science, and it is significant that the Medical Department of this University came into being at the time when Benjamin Silliman had made New Haven the most important center for scientific work and influence in this country. It can hardly be an accidental coincidence that among the graduates of Yale College in the early years of Professor Silliman's teaching are found such men as William Tully, Alexander H. Stevens, who represented medicine at the one hundredth and fiftieth anniversary of this University, Jonathan Knight, Edward Delafield, John Wagner, Samuel H. Dickson, and George McClellan, who became physicians and surgeons of national and international fame.

In 1806 the Corporation of the College passed a resolution for establishing a Medical Professorship, and the Rev. Dr. Nathan Strong of Hartford, who introduced the resolution, and Professor Silliman were appointed a committee to examine and report, and to devise means for effecting the object.

It is to be emphasized that the Medical Department is the direct offspring of Yale College, and was not started, as nearly every other medical school in this country has been, by a group of outside physicians who have subsequently sought connection with a college. Even if there were no other claims, this origin should entitle the Yale Medical School for all time to the fostering care and support of its parent.

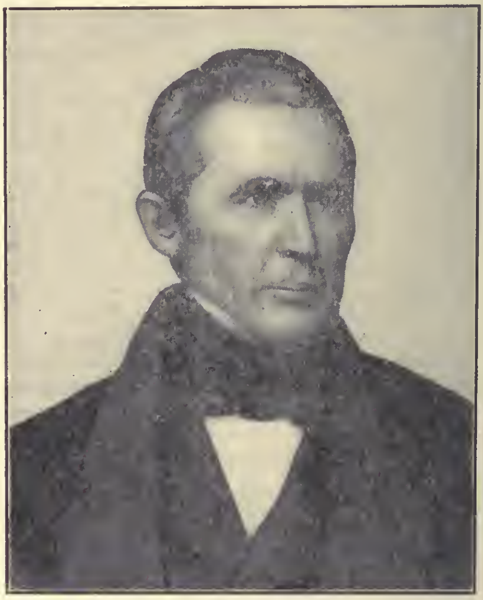
In order to understand the occasion for the negotiations which now ensued between the Corporation of the College and the Connecticut Medical Society, it is to be borne in mind that this Society was possessed, through its charter of 1792, of unusual prerogatives which gave it control of medical education in this State. It was not only an examining and licensing body, which was proper, but also a degree conferring body, which was decidedly improper and a usurpation of a function which should belong only to a college or university. From the beginning the Society had actively exercised all of these functions, and had furthermore made several regulations, which it was empowered to do, regarding medical education.

It was evidently necessary for the College to come to some sort of understanding with the Medical Society, and to induce it, if possible, to relinquish some of its chartered privileges.

It is not necessary here to enter into the details of these negotiations between the College Corporation and the Medical Society, which extended over three years, especially as these have been fully set forth in a readily accessible paper by Dr. E. K. Hunt, a generous benefactor of the Medical School. Suffice it to say that concessions were made on both sides, and that, largely through the efforts of President Dwight and Professor Silliman, representing the College, and of Dr. Eli Ives, representing the Medical Society, a satisfactory and amicable arrangement was reached, apparently without a great deal of friction, and was embodied in "Articles of Union," which constitute the Act creating "The Medical Institution of Yale College," passed by the General Assembly in 1810 at the October session.

This Act fixed the number of professors at four ("to include a complete circle of medical science"), the price of the ticket, and the time of examinations; provided for the establishment of a botanical garden, and of collections in anatomy and in materia medica; for a joint committee of an equal number of persons from the Medical Society and the Corporation to nominate professors to be chosen by the Corporation, and also for a like joint examining board, in which the President of the Society had the casting vote in case of a tie; repealed the right of the Society to grant honorary degrees in medicine, which could hereafter be conferred by the President of the College upon recommendation of the Society; provided that each county could send, upon recommendation of the Society, a gratuitous student, and fixed the term of medical study for college graduates at two years, and for others at three years, attendance upon a single course of lectures being requisite for the license, and upon two courses for the doctorate.

It is evident from this summary that the Connecticut Medical Society shared to a considerable degree with the College the control of the Medical Institution. I do not suppose that the College would have entered into this agreement with the Medical Society, had not the circumstances been such as I have mentioned. Nevertheless this union between the College and the State Medical Society had at that time distinct advantages, the most important of which was the securing of the active interest of the physicians of the State in the new institution. In general the circumstances connected with the foundation and conduct of most medical schools in this country have not been calculated to secure the interest and sympathy of the great body of the medical profession.



Benjamin Silliman, M.D.,

professor of chemistry (in Medical School), 1813-1853; emeritus, 1853-1864.

No more competent testimony to the benefits derived from the union which existed here could be desired than that of Dr. Jonathan Knight, who says in his introductory lecture in 1853: "The result of this arrangement has been eminently happy; all unpleasant feeling was at once and forever allayed; the members of the Society became interested in the school; we have at all times had the benefit of their counsel and support, and it gives me pleasure to state that no instance of disagreement has ever arisen among the members of the Board, or between the School and State Society; on the contrary each has regarded the other as a fellow laborer in the endeavor to promote and advance the interest of medical science."

The relations continued harmonious throughout the remaining period of existence of the agreement between the Society and the Medical School, but with changed conditions the union ceased to be useful and in some ways had become embarrassing, so that in 1884 by mutual consent it was annulled, and the entire control of the School, the official name of which had meantime been changed by the new charter of 1879 to that of "The Medical Department of Yale College," passed into the hands of the University.

The charter of 1810 by its limitation of the number of professors and of the period of undergraduate medical study, and its regulation of other matters better left to the discretion of the College, was an extremely inelastic instrument, and it is not surprising that repeated legislative changes were found necessary. There have been not less than four distinct charters of incorporation of the Medical School, and in addition five or six amendatory acts. The present charter, which seems to be free from the defects of its predecessors, was enacted in 1879.

At the time of its incorporation in 1810 the Medical Institution of Yale College was the sixth medical school in the United States, the others being the Medical Department of the University of Pennsylvania, founded in 1765, the College of Physicians and Surgeons in New York, founded in 1807, but a descendant of the Medical Department of Columbia University, established in 1768, and the Medical Departments of Harvard (1783), of Dartmouth (1797), and of the University of Maryland (1807).

A commodious stone building on Grove Street, erected by Mr. James Hillhouse, was secured for the use of the Medical School, and in 1814 this with an adjacent plot of ground was purchased by the aid of a generous donation by the State of twenty thousand dollars, obtained largely through the efforts of Dr. Nathan Smith. This building, which is now South Sheffield Hall, was the location of the Medical School until its removal in 1859 to its present site on York Street.

The members of the first Faculty of the Medical School, appointed in 1812, were in the order of arrangement of their names in the College catalogue: Eneas Munson, the Professor of Materia Medica and Botany; Nathan Smith, Professor of the Theory and Practice of Physic, Surgery, and Obstetrics; Eli Ives, Adjunct Professor of Materia Medica and Botany; Benjamin Silliman, Professor of Chemistry and Pharmacy, and Jonathan Knight, Professor of Anatomy.

Dr. Munson, to whom I have already referred, was an octogenarian at the time of his appointment, which was, as was intended, only an ornamental one, Dr. Ives, the adjunct professor, his pupil and friend, performing the active duties of his chair. The remaining members of this Faculty made a group of medical teachers who could challenge comparison with any similar group in this country. Of Benjamin Silliman it is not necessary for me to speak further, as his most important work lay outside of the immediate field of medicine, and will be considered by another speaker.

Dr. Nathan Smith, when he came to New Haven from Dartmouth, was already a star of the first magnitude in the medical firmament. Starting a poor boy in a small village in Vermont he managed by his own efforts to obtain a good general education and then at the Harvard Medical School and in Great Britain a medical education of a character then almost unknown in New England. He was the originator of the Dartmouth Medical School in 1797, the most distinguished member of the first Medical Faculty of Yale, and in 1820 the organizer of the Medical Department of Bowdoin College. He did much of his most important work in New Haven, where he remained until his death in 1829.

Nathan Smith shed undying glory upon the Yale Medical School. Famous in his day and generation, he is still more famous to-day, for he was far ahead of his times, and his reputation, unlike that of so many medical worthies of the past, has steadily increased as the medical profession has slowly caught up with him. We now see that he did more for the general advancement of medical and surgical practice than did any of his predecessors or contemporaries in this country. He was a man of high intellectual and moral qualities, of great originality and untiring energy, an accurate and keen observer, unfettered by traditions and theories, fearless, and above all blessed with an uncommon fund of plain common sense.

Nathan Smith's essay on Typhous Fever, published in 1824, is like a fresh breeze from the sea amid the dreary and stifling writings of most of his contemporaries. The disease which he here describes is typhoid fever, and never before had the symptoms been so clearly and accurately pictured. He recognized that this fever is due to a specific cause and is self-limited. It took courage in those days for a physician to write, "During the whole course of my practice I have never been satisfied that I have cut short a single case of typhus, which I knew to be such;" and again, "It does not follow, of course, that this disease in all cases requires remedies, or that a patient should necessarily take medicines because he has the disease." To him the lancet was not the "magnum donum Dei" that it was to Benjamin Rush, and he did more to do away with its indiscriminate use than any single man. The treatment which he advocated—cold water, milk, and avoidance of all violent remedies—is practically the same as that now employed, but it was many a day before physicians came to accept Dr. Smith's revolutionary views.

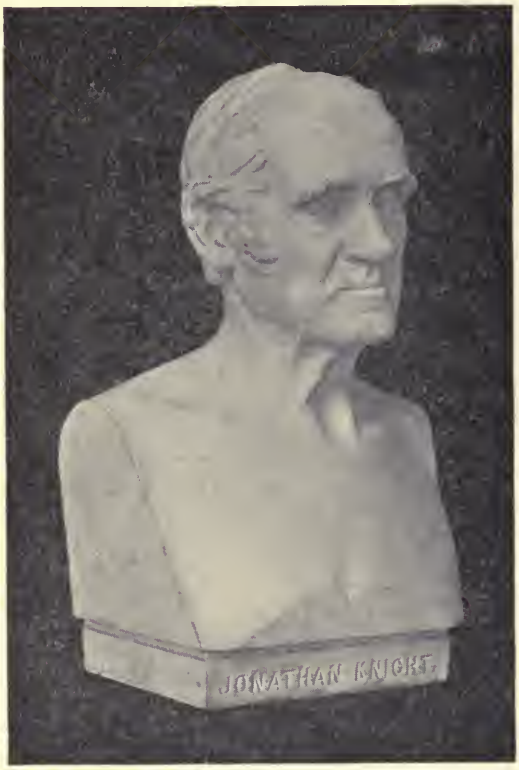
To the surgeon, Nathan Smith's paper on the Pathology and Treatment of Necrosis has in course of time become as much of a classic as the essay on typhous fever is to the physician. Here we find the same admirable description of symptoms, and the introduction of methods of treatment which anticipated modern surgery. This is not the occasion, even did time permit, to describe Dr. Smith's achievements in surgery. It must suffice to say that he was the first to perform a number of important surgical operations, and that in this branch, not less than in medicine, he was an innovator and reformer.

Although none of Dr. Smith's colleagues can be placed in the same rank with him as contributors to medical knowledge, they were men of excellent attainments and became distinguished teachers.

Dr. Eli Ives was connected with the Medical School until his death in 1861, having succeeded to the professorship of Theory and Practice of Physic upon the death of Dr. Smith in 1829, and becoming emeritus in 1853. He was a highly respected physician of large practice in this city. He was widely known as a botanist, and was credited with the most extensive knowledge of the indigenous materia medica of any man of his day, a taste acquired from his preceptor, Dr. Munson. His mind was richly stored with facts, and all were impressed with the value of his teachings.

Dr. Jonathan Knight, who was only twenty-three when appointed professor, became one of the most influential men in the medical profession of this country, having been twice President of the American Medical Association. He was transferred to the chair of surgery upon the death of Dr. Hubbard in 1838. Of dignified personal appearance and manner, with well balanced mental powers, and fine literary culture, Dr. Knight has probably never had his superior in any medical school in this country as a finished lecturer. He was an active teacher in the Medical School for fifty-one years, dying only a few months before Professor Silliman, the latest survivor of the first Medical Faculty.

With this able and devoted group of teachers and a class of thirty-three students the Medical School began its work in November, 1813. To follow in detail its history from that day to this would far exceed the limits of this address. I regret that I can do no more than make mention of some of the professors who have passed to the majority: Thomas Hubbard, of necessity an inadequate successor of Dr. Nathan Smith in the chair of surgery, a plain self-taught man, of whom Dr. Knight says that he filled his position to the time of his death in 1838 "with great and increasing reputation to himself and benefit to the institution;" William Tully, a really remarkable man, of whom I had hoped to say much more, erudite, original, an experimentalist, unrivaled in his knowledge of the materia medica, an extensive contributor to medical literature; Charles Hooker, of good scientific training, who has the great merit of introducing the newer medicine with its methods of physical examination into New Haven, a writer of valuable papers on auscultation and percussion and on physiological subjects; Henry Bronson, scholarly, devoted to antiquarian research, contributor of important papers on medical history and biography; Worthington Hooker, interested in medical education and the improvement of professional organization, a facile writer, widely known as a useful popularizer of natural science; Moses Clark White, for thirty-three years Professor of Pathology, who taught as early as 1860 the use of the microscope in medicine in this School; Leonard Jacob Sanford, a faithful teacher of anatomy for nearly a quarter of a century, devoted to the interests of the Medical School; James Kingsley Thacher, endowed with unusual intellectual powers and capacity for original scientific investigation, eminent as a comparative anatomist, abreast of modern physiology and clinical medicine, whose early removal by death was an irreparable loss to this Medical School and to medical and biological science.



Jonathan Knight, M.D.,
professor of anatomy and physiology, 1813-1838; professor of principles and practice of surgery,
1838-1864.

While I refrain in general from mention of the names of those who are still living and are the faithful and able successors of these distinguished men, I cannot in this connection pass over the name of Dr. Charles Augustus Lindsley, a member of the Medical Faculty for thirty-seven years and its executive officer for twenty-three years, a devoted teacher and eminent sanitarian.

The period of greatest prosperity of the Medical School, until quite recent years, was the first two decades of its existence, in which the average annual attendance of students was between 70 and 80. The annual attendance then fell to an average of between 30 and 40 for the four decades from 1850 to 1890. Since 1890 it has for the first time exceeded 100. Up to 1894 the largest class was that of 1822, which numbered 92, the largest number of graduates in any year up to 1897 being 36 in 1829. Of the 1221 graduates of the Medical Department up to and including 1900, 27.6 per cent. were also college graduates, and of these three-fourths were graduates of Yale College or of the Sheffield Scientific School. The highest ratio of college graduates (40.6 per cent.) was in the decade 1881 to 1890, when the total number of graduates was smallest.

It is pleasant to recall that the Medical Department, established through the efforts of the first President Dwight, entered upon a second era of prosperity in the administration of the second President Dwight, who in his annual reports has forcibly presented the needs and possibilities of this first offspring of the College.

The standards of the Yale Medical School have always been kept high in comparison with those prevailing at the time, and at certain periods the School has taken the lead in movements to improve medical education, which from about the end of the third to the middle of the eighth decades of the past century was in a woeful plight in America. At the beginning the course of medical lectures here extended through six months, a longer period than obtained at the time in any other medical school in this country.

The first organized effort to raise the standard of requirements for medical education in the United States was made by a Convention of Delegates from Medical Societies and Medical Schools which met in Northampton, Massachusetts, in 1827. The Yale Medical School faithfully conformed to the recommendations of this convention and went to the trouble of securing in 1829 from the Legislature an amendment of its charter whereby the period of medical study was increased to four years for all who were not college graduates, and to three for graduates, and knowledge of Latin and of Natural Philosophy was required for matriculation. The Medical College soon found itself standing almost alone, "faithful among the faithless," and in order to preserve its own existence, it was compelled after three years to return to the old order as regards the length of the period of medical study, although it retained the preliminary requirements, which, however, afterward became inoperative, as they were so far above the demands of other colleges.

The inadequacy of the system of didactic lectures for the training of medical students was nowhere in this country earlier recognized than here. In 1855 the course was supplemented by daily recitations, and, as their advantages were realized, they received in the following years greater and greater emphasis, until they in combination with laboratory practice became at least as early as 1867 a distinctive, and certainly a valuable feature of the School.

In 1879 the Yale Medical Department placed itself in the front rank as regards its standards, with only a few companions at that time, by introducing a stated matriculation examination and a three years' graded course, lengthened in 1896 to four years. Clinical instruction and the recitation and laboratory plan of teaching, which had been early adopted, continued to be the basis of the course. The thoroughness of the training is attested by the unusual success of the graduates of the Yale Medical Department in competitive examinations for positions in the army, in hospitals, and in State Board examinations for the license to practice.

With the laboratory building erected in 1893 and the clinical building now in process of construction, the teaching resources of the Medical Department have been greatly increased, and there is every indication that it has entered on a new era of success and usefulness, but it cannot reach the height of its endeavor or of the position properly belonging to an important department of this great University without a large increase of its present meager endowment.

Of the total number of physicians who have received their liberal education at Yale College and the Sheffield Scientific School, less than one-fifth are graduates of the Yale Medical Department, and it is pertinent to inquire how their Alma Mater has fitted them for their subsequent professional studies. For the great majority and until comparatively recent years this collegiate training was furnished by the old-fashioned classical course, and there can be no question that this, combined with other influences of college life, gave an excellent discipline of mind and character, but with no peculiar adaptation to the study of medicine.

The advance of medical science and art during the last half century has given ever increasing prominence to the value to the student of medicine of a good practical knowledge of chemistry, physics, and general biology. It is to the great credit of this University that this need was first clearly recognized and supplied in this country by the Sheffield Scientific School, which in 1870 offered well planned courses in these branches of science, announced as intended especially for the preliminary training of prospective medical students. With the establishment of the Laboratory of Physiological Chemistry four years later the distinctive, pre-medical biological course was fully organized, and since 1889 this has been open also to students in the Academical Department.

No more convincing testimony to the importance of this new departure in collegiate education is needed than the mere mention of the names of some of those who were graduated from the Scientific School in the ten years following the establishment of this course and who have acquired distinction in medicine or in sciences akin to medicine. Fortunately I cannot illustrate my argument here by the selection of names from those who have passed away, and I trust that it will not be considered invidious if I cite names so familiar to physicians and biologists as those of Prudden, T. H. Russell, Hun, W. B. Platt, Chittenden, Yamagawa, Curtis, Sedgwick, H. L. Taylor, Gilman Thompson, E. B. Wilson, Mitsukuri, H. E. Smith, E. A. Andrews, Ely. Not only was the Laboratory of Physiological Chemistry under the direction of Professor Chittenden been of great service in the preparation of students for the study of medicine, but its contributions to a science of great medical and biological importance are unequaled in number and value in this country and have given it rank with the best laboratories of its kind in the world.

There have been all told not far from 2,300 graduates of Yale in all of its departments (including the Medical), who have become physicians, not counting twice the names of those graduated from more than one department. Of the graduates in arts (1702-1897) about 1100 (9 to 10 per cent.) have entered the medical profession, the percentage being about the same for the eighteenth and the nineteenth centuries, but varying considerably in different years and decades, as appears from data which I have inserted in a note.[1] Especially significant is the fact that from the classes 1822, 1824, 1825, 1826, and 1828, when the Medical Department was at the height of its early prosperity, the number of graduates in arts who became physicians was 80 per cent. above the general percentage for the nineteenth century, and that over 41 per cent. of these received their medical degree from the Yale Medical School, as against 24 per cent. in general for the period since the opening of the Medical Department. Of the graduates of the Scientific School (1852-1897) at least 193 (9.1 per cent.) were later graduated in medicine, 22.3 per cent of these receiving their degree from the Yale Medical Department.

It is of course out of the question to attempt to give here even the most summary account of the more than two thousand Yale physicians of the nineteenth century. Among those no longer living are the names of such famous men as Alexander H. Stevens, Samuel H. Dickson, George McClellan, Nathan R. Smith, William Power, Alfred Stillé, Samuel St. John, William H. Van Buren, Edmund R. Peaslee, J. Lewis Smith, Daniel G. Brinton, William T. Lusk, and many others deserving of mention did time permit. The graduates of Yale in the medical profession have contributed their full share to the making of the medical history of this country. Over one hundred became professors in medical colleges, especially noteworthy being the number and distinction of those who have been and who are connected with the medical schools in New York City. At least thirty have been presidents of their State medical societies.

In all these two hundred years of her existence men have gone forth from Yale, who have adorned the profession of medicine. Among them have been great teachers, leaders who have advanced medical knowledge, improved medical and surgical practice, and raised the standards of professional life and of medical education, men who have served their country in a professional capacity in peace and in war, and many more who have led the useful lives of general practitioners, honored in their homes and by their colleagues, and contributing to the welfare of the communities where they have lived.

In centuries past the greatest renown of many universities lay in their medical faculties. There have been later times when the conditions of medicine and of medical education made it less fit to enter into the life and ideals of a university. It is not so to-day. Medicine has now become one of the great departments of biological science with problems and aims worthy of the highest endeavor of any university, surely none the less worthy because they are associated with human interests of the highest importance.

The union of medical school and university should be of mutual benefit. Medicine needs the influences of a university for its highest development, and the usefulness and fame of a university are greatly increased by a strong medical department. There is to-day no direction of scientific research more productive in results of benefit to mankind and in the increase of useful knowledge than that upon which medicine in these later years has entered, and there can be no nobler work for a university than the promotion of these studies.

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[1] The notes accompanying this address are omitted from this publication.

But medical teaching and research can no longer be successfully carried on with the meager appliances of the past. They require large endowments, many well-equipped and properly supported laboratories, and a body of well-paid teachers thoroughly trained in their special departments. With an ampler supply of such opportunities as these there is every reason to believe that the Yale Medical Department would take that important position in the great forward movement of modern medicine to which its origin, its honorable history, and the fame of this ancient University entitle it. May the next Jubilee find medicine holding this high position in Yale University.

ORIGINAL ARTICLES.

THE LOCAL TREATMENT OF THE ORGANS.

BY BYRON COAKLEY, M.D.,
OF CHICAGO.

Though it has always been considered that the internal organs would not absorb substances injected directly into their parenchyma, I was inclined to believe differently, and I have determined by experiments that the principal organs can be treated locally. I am now in position to assert that the liver, the spleen, the lungs and the kidneys can be beneficially influenced by intra-organic medication and that the heart will respond to intrapericardal stimulation.

In support of my contention I offer the following theoretical considerations and experimental evidence. To my mind, the latter is by far the more important. In my experiments reported in this paper I have used decinormal and saturated saline solutions. Experiments in which other remedial agents have been used will form the subject-matter of another paper. I call the method which I here submit to the profession the intra-organic method. To avoid fallacies and to avoid basing conclusions on false premises, I verified each step on which the intra-organic method is based by laboratory experimentation. Objections have been made to the method; it has been claimed that the employment of this method is associated with dangerous objections. I will enumerate them and attempt to demonstrate that they are theoretical objections and that when the method is employed intelligently they can not and will not occur. I have but recently returned from Europe, where I went to demonstrate this work on the animal before some of the larger scientific bodies, and the following are the principal objections which I heard a few moments before the Berlin, Vienna, Paris, and London demonstrations. They considered the method imbued with the danger of (1) sepsis; (2) air embolism; (3) hemorrhage; (4) formation of hematoma; (5) pressure necrosis; (6) paralysis; (7) rupture of an internal organ or of its capsule; (8) general anemia of the organ injected; (9) local sclerosis from puncture by needle.

I feel certain that these objections were short-lived, for I demonstrated by making injections directly into the organs (after laparotomy) that none of those accidents could happen if the proper precautions were taken. I heard no adverse comment after the demonstrations. The following is a consideration of these objections.

1. *Sepsis.*—By the observance of the modern surgical teachings as to asepsis and antisepsis, this danger can be positively eliminated.

2. *Air Embolism.*—This does not exist, because the instrument which the employment of this method necessitates, the organometer, does not permit the admission of air.

3. *Hemorrhage.*—The operator should have precise anatomical knowledge. He should not puncture large venous or arterial trunks.

4. *Formation of Hematoma.*—This does not occur. The needle used is so fine that it does not cause large extravasations of blood. In thoracentesis, if one accidentally puncture the lung, no hematoma results. In the use of an exploratory syringe for locating a liver abscess, the needle, if it acccidentally puncture the liver substance, does not cause a hematoma.

5. *Pressure Necrosis Due to Pressure of Injected Solution.*—This does not occur, as shown by over one hundred experiments on dogs. To determine pressure necrosis the pressure must be long continued, which it is not when intra-organic injections are practised, as the fluid injected is quickly absorbed.

6. *Paralysis.*—This cannot occur, as pressure of the injected fluid is not prolonged. No solution of continuity of mixed or of motor nerves is caused.

7. *Rupture of an Internal Organ or of Its Capsule.*—This can be avoided if we inject under low pressure and know the maximum amount of the solution of NaCl that can with perfect safety be injected in the different organs in a given time.

8. *Anemia of the Organ Injected.*—This can be avoided if we inject under low pressure, and do not inject an excessive amount of solution in any organ.

9. *Local Sclerosis from Puncture by Needle.*—The danger of this is remote, as the needle is very fine and there is no hemorrhage. The abscess of hemorrhage is positive.

In the experiments it was found preferable to use an agent which was nontoxic and nonirritating. The decinormal salt solution was considered the most acceptable agent, as it is both nontoxic and nonirritating.

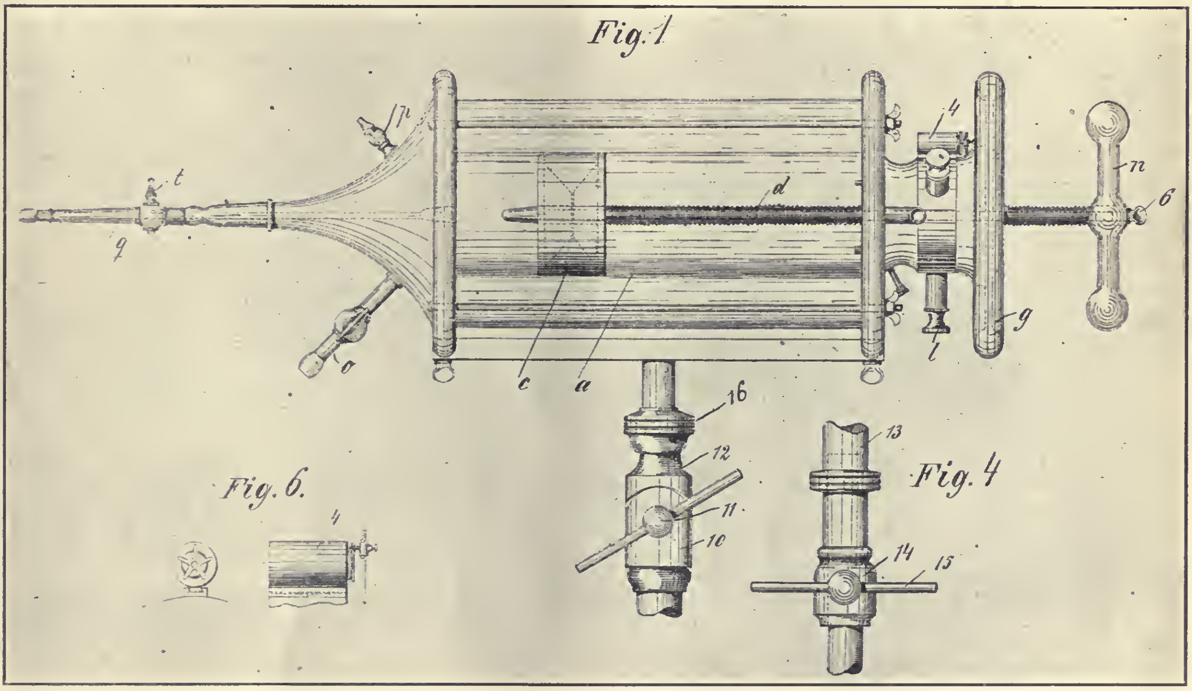
Before using the agent in the intra-organic method, numerous experiments had to be conducted to determine as nearly as possible its physiological action. In certain diseases a high leucocyte-count is of good prognostic omen; and to determine what method of administration and what temperature of the solution would yield the best results special experiments were made along these lines. I first conducted a series of experiments to ascertain the value of salt solution as a protector of the red blood-cell against hemoglobin displacement by CO_2. Next I made a series of experiments to determine the value of NaCl solution at different temperatures as a promoter of leucocytosis and as a stimulant to the organism as a whole. The following is a consideration of the former:

What is the most destructive agent constantly circulating in the blood? After studying the circulation in a general way I arrived at a temporary conclusion until more definite facts could be had. I concluded that carbon dioxide in excessive quantities would not only be deleterious to the red cells but would actually displace the hemoglobin. I drew the latter conclusions from frequently finding the blood serum stained after the dogs had suffered anesthesia narcosis. The following experiments will bear out my conclusions.

Black cur, 22½ lbs. Blood-examination: Whites, 8,100; polymorphonuclear 68, large lymphocytes 12, small lymphocytes 20; reds, 5,000,0000; hemoglobin 90; cells intact.

The left femoral vein was exposed and a light pressure of carbon dioxide was allowed to flow into the vessel. The dog showed the deadly effects of the gas immediately. His blood was at once examined and the serum was found to be thoroughly stained, while the red cells showed nothing but their stroma and a white center. I had given the subject of sodium and CO_2 considerable thought, and on talking with different chemists found that they were pretty well agreed that sodium did not actually combine with CO_2, but that it had the power of holding the CO_2 in suspension, as, for instance, in the water used in soda fountains. I made the following experiments: I took two glasses; in one I put $^6/_{10}$ of 1 per cent. solution of NaCl, in the other pure water. I then held a hose attached to a tank containing CO_2 in the glass of pure water, and then tried to burn a match over the top of the glass; it went out immediately. I tried to burn at least a dozen different matches, but they were immediately extinguished. I then placed the hose in the glass containing the decinormal NaCl solution and, lighting a match, held it over the glass until it was completely consumed. I then tried the same experiment on dry salt in the bottom of a glass. This experiment was as follows: I used two glasses. In one I placed 2 oz. of salt; the other was empty. I placed the hose containing the CO_2 in the empty glass and tried to burn a match over its top; it went out at once. I then placed the hose in the glass containing the dry NaCl and was able to burn five matches without any trouble, but the sixth went out. What does this mean? It must mean that a definite amount of sodium can take up a definite amount of CO_2. I shook the salt up in the glass, and then, holding a burning match over its top, I found no trouble in burning it and five others.

Now we will go back to the dog and see what can be done. If the sodium in the normal NaCl solution will do what I expect of it, hold in suspension the CO_2 and in that way allow the hemoglobin to be again taken up by the red cell, then we will be able to give the dog a chance for his life. I bled the dog down about one-third the general circulation and infused him through the



external jugular until the pulse was full and strong. I had hardly injected a pint of the NaCl solution when the respirations became very rapid and the pulse improved in quality. I injected the liver, spleen, kidneys, and pleural cavities, the latter 5 oz. each, with NaCl solution at 120° F. The dog improved rapidly and inside of fifteen minutes was again breathing normally and the pulse was 80 and strong. The blood was immediately examined by Dr. Roehr of the Columbus Laboratory. He found the serum clear and the hemoglobin again confined to the stroma of the red cells.

To my mind the above experiments show conclusively that a greater affinity exists between the sodium and the CO_2 than can possibly exist between CO_2 and the red cell constituents, and in this way the CO_2 is held in suspension in the blood serum, thereby protecting the red cell against hemoglobin displacement.

The second series of experiments was conducted to determine the comparative leucocytogenic value of the intravenous, subcutaneous, and rectal routes for the administration of the decinormal saline solution at 110° F. Only two of each class of experiments are here reported, as the results were uniform in all. The experiments of Series II. prove conclusively that there is a greater leucocytosis to be secured from intravenous injections than can be secured from the intraintestinal or subcutaneous method, and the experiments show a leucocytosis in all cases.[1]

The experiments of Series III. show as conclusively that the elevation of the temperature of the solution from 110 to 120° F. increases considerably the number of leucocytes in the blood. The heat does not have much effect upon the hemoglobin percentage or upon the number of red blood-corpuscles. The high leucocytosis is probably due to the fact that the heat acts as a severe lymphatic and circulatory irritant, the heat and the NaCl solution undoubtedly accelerating endosmosis and exosmosis.

After enema (C Series 2 and C Series 3) we find the blood-count very little affected. There may be a slight increase of polymorphonuclear neutrophiles and a slight rise in the general blood-pressure, but the main action appears to be on the kidneys, bringing about an increased diuresis. While the means of increasing this diuresis has been through the heightening of the circulatory tension, still the action appears to be directly local upon the kidneys.

While the results of enemata have been fairly satisfactory, still the effects of subcutaneous injections (B Series 2 and B Series 3) are still more satisfactory, for the reasons best shown by the blood-count. By this method of using NaCl solution we have a higher leucocytosis with quicker and greater reaction. How can this be accounted for? If a pint of decinormal NaCl sol. at 110° F. be injected beneath the skin of the breast, it will take from one-half to two hours before it is entirely absorbed and yet the effects are almost immediate.

If a pint of decinormal saline solution be injected into the external jugular vein (A Series 2 and A Series 3), the effects are still more prompt and pleasing and the blood-count is in most cases greatly influenced.

Are these different degrees of metabolic activity directly the result of the stimulating properties of the salt on tissues of greater or less resisting power; or, are they the direct result of the stimulation afforded by the presence of heat and salt in tissues of different density; or, are they the result of increased bulk suddenly thrown upon the organism under different conditions; or, are they the result of irritants of a greater or less degree of intensity (different degrees of temperature); or, are they the result of organized effort on the part of Nature to throw off a foreign body, with increased metabolism as a direct result?

The experiments of Series IV. emphasize the value of using normal salt solution at high temperatures. In this series it will be noted that the solution was used at body heat, and very little circulatory reaction was obtained.

Body heat 98.6° F.

Series 4. A.

Brown cur, weight 23½ lbs. Blood-count before infusion: Whites, 8,000; reds, 5,000,000; whites, polymorphonuclear, 68 per cent.; large white, 8 per cent.; small white, 24 per cent.; hemoglobin, 98 per cent.

I injected 8℥ of decinormal NaCl sol. at 98.6 F. in the external jugular vein every ten minutes for forty minutes, the blood was then examined with the following results: Whites, 8,300; polymorphonuclear, 72 per cent.; large lymphocytes, 10 per cent.; small lymphocytes. 18 per cent.; whites, gain, 300; hemoglobin, loss, 2 per cent.; reds, 5,000,000; few normoblasts; hemoglobin, 96 per cent.

Series 4. B.

Black, female, weight 19¼ lbs. Subcutaneous injection. Solution injected at body heat. Whites, before experimenting, 6,500; polymorphonuclear, 74 per cent.; large lymphocytes, 14 per cent.; small lymphocytes, 12 per cent.; hemoglobin, 69 per cent.; reds, before experimenting, 5,200,000.

I injected 8℥ of decinormal NaCl sol. at 98.6° F. under skin of both the left and right sides of the abdominal walls every ten minutes for forty minutes. I then examined the blood with the following results: Whites, 8,500; polymorphonuclear, 68 per cent.; large lymphocytes, 12 per cent.; small lymphocytes, 20 per cent.; whites, gain, 2,000; hemoglobin, 66 per cent.; reds, 4,800,000; reds, loss, 400,000; hemoglobin, loss, .3 per cent. Examination of the blood one hour and a half later showed whites, 8,700; polymorphonuclear, 71 per cent.; large lymphocytes, 18 per cent.; small lymphocytes, 11 per cent.; whites, gain, 2,200; reds, 5,000,000; hemoglobin, 80 per cent.; reds, loss, 200,000; hemoglobin, gain, 11 per cent.

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[1] Allowance was made in every case for postdigestive leucocytosis.

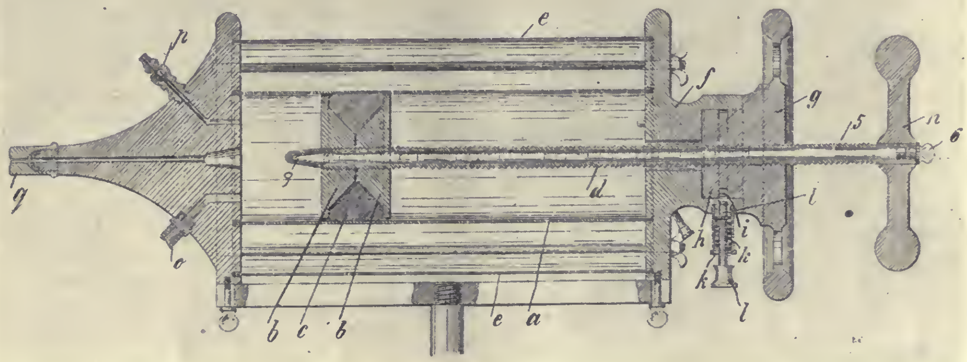
Series 4. C.

Large brindle, weight 62 lbs. High enema of 2 quarts at 98.6° F. was given and rectum clamped to prevent expulsion.

Blood-count before experiment showed: Reds, 5,800,000; hemoglobin, 100; whites, 7,200; polymorphonuclear, 60 per cent.; small lymphocytes, 28 per cent.; large lymphocytes, 12 per cent.; reds after two hours, 5,600,000; whites after two hours, 8,000; polymorphonuclear, 86 per cent.; small lymphocytes, 23 per cent.; large lymphocytes, 11 per cent.; hemoglobin, 98 per cent.; reds, loss, 200,000; whites, gain, 800; hemoglobin, loss, 2 per cent.

While the effect of the action of the salt on the organism is apparent in the experiments of Series 4, yet on the whole I can find no great circulatory change. In all the cases thus far reported a dog from each series was kept alive for one week and the blood examined for the red and white count and hemoglobin percentage and it was found that the condition in general (in this series) remained about the same, with the exception of a higher leucocyte count.

Fig. 2.



Is blood-letting deleterious or beneficial to the organism as a therapeutic measure in the treatment of disease? I quote the following from Osler's Practice of Medicine in support of the measure:

"The reproach of Von Helmont, 'A bloody Moloch presides in the chair of medicine,' cannot be brought against the present generation of physicians. During the first five decades of this century the profession bled too freely, but during the last decades we certainly bleed too little."

Dr. John Parmenter, in Park's Surgery, says: "In whatever way blood may be withdrawn from the body, there can be no doubt of the value of such a therapeutic agent in properly selected cases, and it is to be regretted that such a simple and direct measure should have been supplanted by much less effective and more depressing medicinal means."

In experiments conducted to determine how much blood could be withdrawn from the organism and life maintained by the decinormal salt solution, I found that bleeding improved the condition of the dogs, that it was always followed by an immediate increase in the leucocyte-count, and ultimately by an increase in the red cell-count and hemoglobin percentage. Leucocyte, red cell and hemoglobin increase is made evident by the experiments of Series V.

Series 5. A.

Black and white cur, weight 24 lbs. Blood examinations before experiment: White cells, 9,000; polymorphonuclear, 72 per cent.; small lymphocytes, 18 per cent.; large lymphocytes, 10 per cent.; hemoglobin, 100 per cent.; red cells, 5,000,000. I withdrew 9 oz. of blood from the external jugular vein. Dog showed no particular shock and seemed strong next day, when blood examination showed: White cells, 12,000; polymorphonuclear, 72 per cent.; small lymphocytes, 12 per cent.; large lymphocytes, 16 per cent.; hemoglobin, 100 per cent.; white cells, gain, 3,000. Reds, —. Blood examination five days later showed: White cells, 13,000; polymorphonuclear, 78 per cent.; small lymphocytes, 6 per cent.; large lymphocytes, 6 per cent.; myelocytes, 10 per cent.; hemoglobin, 100 per cent. Reds, 5,200,000; white cells, gain, 1,000; red cells, gain, 200,000.

Series 5. B.

Spotted coach dog, weight 30½ lbs. Blood-count before experiment: Whites, 8,000; polymorphonuclear, 72 per cent.; small lymphocytes, 16 per cent.; large lymphocytes, 6 per cent.; myelocytes, 6 per cent.; hemoglobin, 86 per cent. Reds, 5,000,000. Withdrew 14 oz. of blood; the animal immediately suffered great shock. He was put in a cage and in one hour the blood-count showed: Reds, 6,200,000; whites, 20,000; polymorphonuclear, 54 per cent.; small lymphocytes, 20 per cent.; large lymphocytes, 7 per cent.; myelocytes, 19 per cent.; hemoglobin, 84 per cent.; reds, gain, 1,200,000; whites, gain, 12,000; hemoglobin, loss, 2. Normoblasts in large numbers. Examination on third day. Gain or loss after first examination: Reds, loss, 1,800,000; whites, gain, 4,200; hemoglobin, loss, 26. Whites, 12,200; polymorphonuclear, 66; small lymphocytes, 23; large lymphocytes, 11; hemoblobin, 60. Reds, 3,200,000. Great many normoblasts. Dog seemed stronger. Gain or loss after first examination: Reds, loss, 1,800,000; whites, gain, 4,200; hemoglobin, loss, 26. Examination on sixth day: Whites, 14,000; polymorphonuclear, 80 per cent.; small lymphocytes, 14 per cent.; myelocytes, 6 per cent.; hemoglobin, 60 per cent. Reds, 3,600,000. Many normoblasts. Gain or loss after first examination: Red, loss, 1,400,000; whites, gain, 6,000; hemoglobin, loss, 20. Examination on fourteenth day: Whites, 11,000; polymorphonuclear, 70 per cent.; small lymphocytes, 18 per cent.; large lymphocytes, 12 per cent.; hemoglobin, 100 per cent. Reds, 5,300,000. Very few normoblasts. Gain or loss after first examination: Reds, gain, 300,000; whites, gain, 3,000; hemoglobin, gain, 14 per cent.

Having shown that decinormal salt solution caused increased leucocytosis, and that bleeding caused a still greater leucocytosis, I concluded that by combining the two measures I would get their combined effects. The experiments of Series VI. confirmed my conclusions. In experiment B of this series, it will be seen that at the end of six days there were still a marked leucocytosis, an increase of the hemoglobin percentage and an increase of the red cell-count. I got better results in those cases in which frequently repeated small quantities of blood (2 to 4 oz.) were withdrawn every three or four hours, each blood-letting to be followed by an infusion of decinormal salt solution of three or four times the quantity of blood withdrawn.

Series 6. A.

Black cur, weight 40 lbs. Blood examination before experiment: Whites, 7,200; polymorphonuclear, 70 per cent.; small lymphocytes, 20 per cent.; large lymphocytes, 10 per cent.; hemoglobin, 90 per cent.; reds, 5,150,000.

The external jugulars were exposed, a trocar was thrust into the left jugular and an infusion needle into the right. The NaCl solution was then allowed to pass into the vessel, and at the end of two minutes the blood was allowed to flow from the trocar in the left jugular; 4 oz. of blood were withdrawn and 12 oz. of decinormal NaCl sol. at 110° F. were injected. The dog gave evidence of little or no shock and seemed as strong as ever. At the end of an hour the blood was examined with the following results: Whites, 7,400; polymorphonuclear, 72 per cent.; large lymphocytes, 12 per cent.; small lymphocytes, 22 per cent.; hemoglobin, 88 per cent. Reds, 5,000,000. Few normoblasts. Gain or loss after first examination: Reds, loss, 150,000; whites, gain, 200; hemoglobin, loss, 2 per cent. The blood was examined on the fifth day after operation with following results; Whites, 8,000; polymorphonuclear, 80 per cent.; small lymphocytes, 12 per cent.; large lymphocytes, 8 per cent.; hemoglobin, 90 per cent. Reds, 5,200,000. No normoblasts. Gain or loss after first examination: Reds, gain, 50,000; whites, gain, 800.

Series 6. B.

Yellow cur, weight 27½ lbs. Blood examination before experiment: Whites, 9,000; polymorphonuclear, 68 per cent.; small lymphocytes, 12 per cent.; myelocytes, 11 per cent.; large lymphocytes, 9 per cent.; hemoglobin, 68 per cent. Reds, 4,800,000. External jugulars exposed, the needle and trocar arranged as in experiment 6. A; 4 oz. of blood were withdrawn every three hours for eighteen hours, and 8 oz. of the decinormal NaCl sol. at 110° F. were injected after each bleeding. Blood examination after first hour showed: Whites, 10,000; polymorphonuclear, 70 per cent.; small lymphocytes, 10 per cent.; large lymphocytes. 6 per cent.; myelocytes, 14 per cent. Reds, 4,800,000; hemoglobin, 68 per cent. Loss or gain after first examination: Whites, gain, 1,000. Blood examined at end of sixth hour: Whites, 11,000; polymorphonuclear, 74 per cent.; small lymphocytes, 8 per cent.; large lymphocytes, 18 per cent. Reds, 4,800,000; hemoglobin, 70 per cent. Loss or gain after first examination: Hemoglobin, gain, 2; whites, gain, 2,000. Blood examination on ninth hour: Whites, 14,000; polymorphonuclear, 80 per cent.; myelocytes, 8 per cent.; small lymphocytes, 12 per cent. Reds, 4,600,000; hemoglobin, 66 per cent. Loss or gain after first examination: Hemoglobin, loss, 4 per cent.; whites, gain, 5,000; reds, loss, 200,000. Blood examined on twelfth hour: Whites, 14,000; polymorphonuclear, 72 per cent.; small lymphocytes, 11 per cent.; myelocytes, 6 per cent.; large lymphocytes, 11 per cent. Reds, 4,600,000; hemoglobin, 70 per cent. Loss or gain after first examination: Hemoglobin, gain, 2 per cent.; whites, gain, 5,000; reds, loss, 200,000. Blood examined on fifteenth hour: Whites, 16,000; polymorphonuclear, 79 per cent.; small lymphocytes, 21 per cent. Reds, 4,700,000; hemoglobin, 68 per cent. Loss or gain after first examination: Whites, gain, 7,000; reds, loss, 100,000. Blood examined on eighteenth hour: Whites, 16,500; polymorphonuclear, 76 per cent.; small lymphocytes, 14 per cent.; large lymphocytes, 10 per cent. Reds, 4,900,000; hemoglobin, 85 per cent.; few normoblasts. Loss or gain after first examination: Hemoglobin, gain, 17; whites, gain, 7,500; reds, gain, 100,000. Blood examined on sixth day: Whites, 12,000; polymorphonuclear, 72 per cent.; small lymphocytes, 11 per cent.; large lymphocytes, 17 per cent. Reds, 5,100,000; hemoglobin, 92 per cent. Loss or gain after first examination: Hemoglobin, gain, 24 per cent.; whites, gain, 3,000; reds, gain, 300,000. The red cells made a gain of 300,000 and the whites made a gain of 3,000. Hemoglobin gained 24 per cent. Dog was very active.

Series 6. C.

Fox terrier; weight 18 lbs. The jugulars were exposed, needle and trocar introduced, as in experiments A and B, and 6 oz. of blood removed from the circulation; 10℥ of decinormal NaCl sol. at 110° F. were then injected. Blood-count before injection showed: Whites, 7,200; polymorphonuclear, 68 per cent.; small lymphocytes, 12 per cent.; large lymphocytes, 20 per cent. Reds, 5,150,000; hemoglobin, 90.

After injection (3 hours) blood-count showed: Whites, 8,100; polymorphonuclear, 74 per cent.; small lymphocytes, 11 per cent.; large lymphocytes, 15 per cent. Reds, 6,000,000; hemoglobin, 92 per cent.; few normoblasts. Gain or loss after first examination: Hemoglobin, gain, 2; reds, gain, 850,000; whites, gain, 900.

Six hours after the first injection 8 oz. of blood were withdrawn and 14 oz. of the decinormal NaCl sol. at 110° F. were injected. Blood-count showed: Whites, 22,000; polymorphonuclear, 74 per cent.; small lymphocytes, 26 per cent. Reds, 6,000,000; hemoglobin, 93 per cent; normoblasts were present in large numbers. Gain or loss after first examination: Hemoglobin, gain, 3 per cent.; whites, gain, 14,800; reds, gain, 850,000.

Series 6. D.

Gray bull, weight 24 lbs. Jugulars exposed as in experiments A, B and C, and the infusion needle and trocar inserted. Blood-examination before experiment showed: Whites, 7,200; polymorphonuclear, 70 per cent.; large lymphocytes, 18 per cent.; small lymphocytes, 12 per cent. Reds, 5,100,000; hemoglobin, 91 per cent.

One hour was taken to withdraw 12 oz. of blood and then 20 oz. of the decinormal NaCl sol. at 110° F. were injected. Blood-count showed: Whites, 20,000; polymorphonuclear, 74 per cent.; small lymphocytes, 22 per cent.; large lymphocytes, 4 per cent. Reds, 5,600,000; normoblasts present; hemoglobin, 100 per cent. Loss or gain after first examination: Whites, gain, 12,800; reds, gain, 500,000; hemoglobin, gain, 9 per cent.

At the end of three hours 20 oz. of blood were slowly withdrawn and 32 oz. of the decinormal NaCl sol. at 110° F. were injected. Blood-count: Whites, 41,000; polymorphonuclear, 10 per cent.; small lymphocytes, 60 per cent.; large lymphocytes, 15 per cent.; myelocytes, 15 per cent. Reds, 7,000,000; nearly all nucleated; hemoglobin, 92. Loss or gain after first examination: Whites, gain, 33,800; reds, gain, 1,900,000; hemoglobin, gain, 1 per cent.

The following will show the marked effect of heat and the concentrated salt solution on heart muscle when applied locally to that organ:

Dog D. of Series VI. was very weak at the end of the operation and the heart showed signs of giving out. A needle attached to the organometer holding 2 oz. of the saturated NaCl sol. at 120° F. was thrust into pericardium and then a wait was made for the heart beat to become as weak as possible without death ensuing. I was obliged to wait about forty minutes for this to take place, and when the heart action was simply a flutter I injected (taking forty to fifty minutes to complete the injection) the solution. It was about ten minutes after the solution was introduced before any great result was noticeable. At the end of fifty-five minutes the heart's action was stronger and the respiration showed signs of improvement. At the end of sixty-five minutes the respirations were 40, pulse 100. At the end of one hundred minutes the pulse was 70, the respiration 22. The dog was put in ice bath with the idea of concentrating the circulation as much as possible. The pulse at the end of one hundred and thirty minutes was 110, respirations 40, but they never went higher than these figures. A blood-count at the end of two and a half hours showed:

Whites 90,000, small lymphocytes 70, myelocytes 15, large lymphocytes 15, reds 1,200,000. All nucleated. Mostly normoblasts. Hemoglobin 21.

Dog recovered. At the end of twelfth day blood-count showed:

Whites 10,000, polymorphonuclear 14, small lymphocytes 56, large lymphocytes 15, myelocytes 15, reds 4,500,000. Great many nucleated cells.

From the results of my work thus far I can draw but one conclusion, and that is that the greatest possible localization of effort is necessary before we can expect to get the great reaction necessary to combat serious diseases. If the seat of the disease can be gotten at there will be but little trouble in taking care of the systemic requirements. If the appendix be involved, we remove the local trouble first and then look after the circulation, etc. If the bladder be diseased, we treat the bladder first and the systemic conditions are a secondary consideration. But if the heart, liver, lungs, spleen, and kidneys be involved, we must open either the abdominal or thoracic cavities and treat them surgically, or depend upon the usual routine of drugs; and when the latter treatment is resorted to we know nothing positive of the effects that will follow. I am not holding the value of drugs cheaply; on the contrary, I would advocate their use as long as the organism will respond to them without injury. But when they have accomplished all they can, what is left? Nothing! If the system be overloaded with toxins and the already overworked kidneys refuse to act, we must depend upon an equally weak heart for blood-pressure, and, if that cannot be obtained, the patient will probably die. If we have a hematogenous jaundice following malaria, severe fevers, pernicious anemia, etc., we must depend upon elimination through the already over-worked organs, and for activity of the liver-cells we must depend upon drugs, lavage of the bowel, etc.

In acute conditions of the spleen, what can be done by the methods now in vogue? Nothing in the way of direct stimulation except external application of heat, etc. In consolidated areas of pneumonic lung, what can be done at this time in the way of direct treatment? Nothing but external application of heat, cold, etc., and the internal administration of such drugs as carbonate of ammonia, codeine, etc.

The pathologists tell us that the spleen should be looked upon in pathological conditions as the destroyer of the blood, but they suggest little in the way of relief from such conditions. I could go on almost indefinitely and cite condition after condition in these organs that I feel we ought to endeavor to relieve by getting a greater localization of effort, backed up by as much fighting material as the organism can command under reinforced conditions. Then the question comes up, how are we going to improve upon the present methods? And how are we going to convert our embryonic ideas into a practicable system? I see no other way but boldly to enter the organs and treat them with the same fearlessness as we do the bladder, the intestines or the stomach. To be sure that a greater metabolism could be secured by direct injection of the organs, I made the following experiments and they fully sustain my claim that the intra-organic method of treating diseased organs is a rational one, and that when fully developed it will offer the largest number of successes.

In experiments of Series VII., I first ascertained to what extent high enemata, subcutaneous injections and intravenous infusions of decinormal salt solution would influence the metabolism of the organs, special attention being paid to the liver and the kidneys. It was found that the intra-organic injections increased the metabolism far more than the other methods of administration, as is well shown in the experiments of this series. In fact, there is no comparison between the results obtained by the intra-organic method and those obtained by the other methods.

Series 7. A.

White cur, weight 26¼ lbs.; blood-count before experiment:

Whites, 8,700
Poly. 71 per cent.
S. L. 20 per cent.
L. L. 9 per cent.
Reds, 5,500,000. Hemo. 94 per cent.

Abdomen opened, urinary bladder and gall-bladder stitched to abdominal wall, opened and washed out. At the end of one hour the urinary bladder contained 1℥ of urine; the gall-bladder 2℥ of bile. Dog was then bled 4 oz. At the end of four hours from the first operation the urinary bladder contained 3℥ of urine; the gall-bladder 1½℥ of bile. The bladder and gall-bladder were then washed out. At the end of six hours, dog was given an enema of 2 qts. of decinormal NaCl sol. at 110° F.; this solution was held by clamp on rectum for 2½ hours. At end of this time the urinary bladder contained 2½℥ of urine; gall-bladder contained 1½℥ of bile. Dog was given a rest of six hours, then after washing out both bladders he was infused with 20 oz. of decinormal NaCl sol. at 110° F. At the end of 30 minutes the gall-bladder contained ½℥ of bile, 30 minutes later ½℥ more of bile, at the end of the second hour the gall-bladder held 1℥ of bile and at the end of two hours and thirty minutes, the gall-bladder held 20 minims of bile. The secretion of urine was as follows:

End 30 min.	½ ʒ	of urine.
End of 1 hr.	3 ʒ	of urine.
End of 2 hrs.	2 ʒ	of urine.
End of 2½ hrs.	½ ʒ	of urine.

The dog was then given a rest of 12 hours and the next day the kidneys and the liver were each injected (after washing out the bladder and gall-bladder) with 30 c.c. of the decinormal NaCl sol. at 110° F. In 10 minutes the urinary bladder held 12℥ of urine and the gall-bladder held 2½℥ of bile, or, as much bile was obtained in 10 minutes by injecting directly into the liver as was obtained by waiting two and one-half hours after infusion. The urinary bladder contained 6⅓℥ of urine in 2½ hours of normal activity; and 12℥ were obtained in 10 minutes by injecting both kidneys with 30 c.c. each of the decinormal NaCl sol. at 110° F. The bladders were carefully washed out after each measurement. The common duct was ligated and urethra clamped in every instance during these experiments. The blood was examined at the end of the last operation with the following results:

Whites, 14,000
Poly. 79 per cent.
L. L. 15 per cent.
S. L. 6 per cent.
Reds, 5,450,000. Hemo. 90 per cent.

	Whites	Reds	Hemo.
Gain	5,300	—	—
Loss	—	50,000	4 per cent.

Series 7. B.

Brindle cur, weight 21 lbs. Examination of the blood before experiment:

Whites, 5,800
Poly. 68 per cent.
Myel. 20 per cent.
L. L. 12 per cent.
Reds, 4,200,000. Hemo. 72 per cent.

Abdomen opened, gall-bladder brought to surface, opened, washed out and anchored to abdominal wall. Common duct ligated. Urinary bladder brought to surface, anchored, opened, washed out and urethra clamped. Dog was given high enema (1 qt.) of the decinormal NaCl sol. at 110° F., rectum clamped, at end of one hour the gall-bladder was opened and found to contain ⅓℥ of bile, Sp. gr. 1012. Urinary bladder was opened and found to contain 3⅛℥ of urine, Sp. gr. 1015. Blood-examination after experiment:

Whites, 6,100
Poly. 70 per cent.
Myel. 18 per cent.
L. L. 12 per cent.
Reds, 4,200,000. Hemo. 64 per cent.

Loss or gain after initial examination:

Hemo. Loss — Gain 2 per cent. Whites Loss — Gain 3 per cent.
Reds Loss — Gain —

Series 7. C.

Fox terrier. Blood examination before experiment:

Whites, 6,800 Poly. 69 per cent. L. L. 15 per cent. S. L. 16 per cent.
Reds, 5,000,000. Hemo. 90 per cent.

Abdomen opened, gall-bladder and urinary bladder anchored to abdominal wall, opened and washed out, clamp applied to openings, common duct and urethra clamped. At end of one hour the gall-bladder contained ½℥ of bile and the urinary bladder 1½℥ of urine; 12℥ of the decinormal saline solution at 110° F. were injected under the skin of the abdominal walls. At the end of second hour the gall-bladder contained 1℥ of bile, Sp. gr. 1013. Urinary bladder contained 2℥ urine Sp. gr. 1012. Blood-examination after experiment:

Whites, 6,950 Poly. 72 per cent. Myel. 1 per cent. L. L. 18 per cent. S. L. 9 per cent.
Reds, 5,000,000. Hemo. 89 per cent.

Loss or gain after initial examination:

Hemo. Loss 1 per cent. Gain —— Reds Loss — Gain — Whites Loss — Gain 150

Series 7. D.

Black cur, weight 14 lbs. Blood-examination before experiment:

Whites, 8,100 Poly. 70 per cent. L. L. 15 per cent. S. L. 15 per cent.
Reds, 5,100,000. Hemo. 94 per cent.

Abdomen opened, gall-bladder and urinary bladder anchored to abdominal walls, opened and washed out. Clamp applied to openings, common duct ligated and urethra clamped. At end of one hour gall-bladder contained ½℥ of bile, Sp. gr. 1012. Urinary bladder ½℥ urine, Sp. gr. 1008; 12 oz. decinormal NaCl sol. at 110° F. were injected in the external jugular vein. At the end of the second hour the gall-bladder contained 1½℥ of bile, Sp. gr. 1010, urinary bladder contained 8℥ urine, Sp. gr. 1012.

Blood-examination after experiment:

Whites, 11,000 Poly. 66 per cent. S. L. 24 per cent. L. L. 10 per cent.
Reds, 5,200,000. Hemo. 90 per cent.

Loss or gain after initial examination:

Hemo. Loss 47 Gain — Reds Loss —— Gain 100,000 Whites Loss — Gain 2,900

Series 7. E.

Yellow cur, weight 36 lbs.

Whites, 10,100 Poly. 64 per cent. L.L. 28 per cent. S. L. 8 per cent.
Reds, 4,900,000. Hemo. 86 per cent.
(Animal had distemper.)

Abdomen opened, gall-bladder and urinary bladder anchored to abdominal wall, opened and washed out. Clamp applied to urethra and common duct ligated. At the end of one hour the gall-bladder contained ¼℥ of bile, Sp. gr. 1015; and the urinary bladder 1½℥ of urine, Sp. gr. 1014. Urinary bladder and gall-bladder were then washed out and 30 c.c of decinormal NaCl sol. at 120° F. were injected in the left kidney; 30 c.c. of the solution were injected in liver at this time. In 15 minutes the gall-bladder contained 2½℥ of bile, Sp. gr. 1010, and the urinary bladder contained 10℥ of urine, Sp. gr. 1012. The liver was again injected with 30 c.c. of the decinormal NaCl sol. and this time the right kidney was injected with 30 c.c. of sol. at 120° F. In ten minutes from time of last injection the urinary bladder contained 8℥ of urine Sp. gr. 1008, and the gall-bladder 2℥ of bile, Sp. gr. 1010. The bladders were then washed out and in 20 minutes from the time of last injection the gall-bladder contained 2℥ of bile, Sp. gr. 1002, and the urinary bladder 6℥ of urine, Sp. gr. 1004. The left kidney was again injected with 30 c.c. of the decinormal NaCl sol. at 120° F. A coarse needle was used, which caused hematoma; the latter disappeared in about two hours.

(To be continued)

NEURECTOMY FOR FACIAL NEURALGIA.

BY E. M. MAGRUDER, M.D.,
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Facial neuralgia is probably one of the most obstinate of the non-fatal affections with which the physician has to deal, and it taxes his skill and ingenuity and the patience of the sufferer more than any other disease.

"The pathology is doubtful. Excised portions of neuralgic nerves when examined microscopically sometimes seem to be normal and sometimes there are signs of inflammation, congestion, exudation, deficiency of blood, etc.; at other times degenerated nerve fibers, sclerosis of blood-vessels, alterations in axis-cylinders and ganglion cells are found" (Anders).

In the treatment of stubborn and long-continued cases the attending physician runs the gamut of antineuralgics as given in the materia medica, with only temporary benefit to his patient, till finally the latter is ready to listen to suggestions of a surgical nature. What does surgery offer in the way of relief? The answer comprises three methods of treatment: (1) *Division* of the nerve-trunk or branch that gives pain. This is hardly worth mentioning as there is very soon a reëstablishment of function and return of pain. (2) *Excision* of the ganglion of Gaster. With this I have had no personal experience. "It is, however, a difficult and dangerous operation, is followed by dangerous trophic lesions, and does not give permanent relief" (Anders). (3) *Excision* of a portion of the offending nerve. With this method I have had a varied and, with one patient, a rather unique experience. These cases all had good family and personal histories.

Case I. was a man, seventy-one years old, who led a sedentary life. For fourteen years he had suffered from neuralgia in the right supraorbital and infraorbital nerves, chiefly in the latter. Eleven operations were done upon this patient between June 11, 1889, and March 22, 1898, inclusive, nearly nine years. In the first, June 11, 1889, about 1¼ inches of the right infraorbital nerve were removed. There was entire relief for about one year and great relief for about seventeen months. Pain then appeared in the distribution of the right supraorbital and right nasal nerves. At the second operation, November 22, 1890, three or four inches of the right supraorbital and one inch of the external branch of the right nasal nerves were removed. Relief in these regions was perfect, but in about two weeks frightful pain appeared in the right upper eyelid and in the region supplied by the right infraorbital nerve. A third operation was performed December 20, 1890; the right infraorbital region was reached through the cicatrix of the first operation and, as no distinct nerve-trunk could be discovered, all the periosteum for one-half inch around the foramen was removed. This undoubtedly contained nerve-filaments, as, when it was pinched with forceps, there was reflex action of the muscle of the eyelids and face of that side, indicating a painful sensation on the part of the patient and showing that the sensory nerve-filaments had been restored. Perfect relief followed for several months, after which there was a gradual return of the old trouble. In the fourth operation, July 14, 1892, the right supraorbital and right infraorbital regions were again operated upon through the old cicatrices and the periosteum removed from around the foramina for one-half inch, as no distinct nerve-trunks could be found. On the day following the operation there was severe pain in the same localities lasting a day or two, followed by partial relief of the neuralgia. The fifth operation was done on June 6, 1894. As the pain had become unbearable in the right infraorbital region, the same procedure was again resorted to and a periosteal disk was removed from around the foramen, with only partial relief. In the sixth, February 20, 1895, the right infraorbital region was again operated upon as before, with subsequent pain and then partial relief. In the seventh, September 28, 1895; the right infraorbital region was again the seat of operation, as in the fifth operation, with subsequent pain and then partial relief. In the eighth operation, August 8, 1896, the right supra- and infraorbital regions were subjected to operation with subsequent pain and then partial relief. In the ninth operation, June 28, 1897, the right infraorbital region was operated upon with subsequent pain, followed by partial relief. In the tenth, November 24, 1897, the right supra- and infraorbital regions were operated upon with subsequent pain, followed by partial relief. In the eleventh, March 22, 1898, the right infraorbital and right temporal regions had become so painful that they were operated upon. The fascia and muscles of the temporal region were removed down to the periosteum and the skin edges of the wound brought together with sutures. A marked depression was caused.

This operation, which was the last, gave considerable relief for some time, but the old trouble returned and the patient was at times a great sufferer from pains in the right infraorbital region, upper lip, and gums of the upper and lower jaw on the affected side. Various drugs, chiefly codeia, were then used constantly till his death, which occurred in April, 1901. After a period of suffering and confinement in bed for several days this patient had begun to sit up in a chair. On rising one day from the sitting posture he was observed to reel, stagger and fall; death ensued in about three-quarters of an hour; the patient was eighty-three years of age.

It will thus be seen that in this patient the right supraorbital region was the seat of operation four times, the right infraorbital region ten times, the right nasal nerve once, and the right temporal region once. All these operations gave more or less temporary relief, varying from four to eighteen months—in the earlier ones perfect relief and in the later ones only an amelioration of symptoms. On several occasions immediately after some of the later operations the pain seemed to undergo terrible exacerbation for several days, and then it would diminish, but not entirely disappear. The disfigurement was remarkably slight after the first two operations in any one place, but increased with each subsequent operation and became finally quite marked.

Case II. was that of a single woman, fifty-eight years old, of slender build. For eleven years she had suffered from pain chiefly in the distribution of the left inferior dental nerve, but also along the left auriculotemporal, gustatory, and mylohyoid nerves. About 3⅜ inches of the inferior dental nerve were removed. Perfect relief followed for six months, and then the pain gradually returned in the same place and was as severe as before, but there were still intervals of comparative relief.

Case III. was that of an old lady about sixty years of age, who had been suffering a long time from neuralgia of the inferior dental nerve of one side. About 3½ inches of the nerve were removed and perfect relief for eight or ten months followed, but the pain returned after that time.

Case IV. was that of a woman, fifty-three years old, who for thirteen years had been afflicted with inferior dental neuralgia of one side. About 2 inches of the nerve were removed with entire relief for one year, at the end of which time the pain began to return.

Case V. was that of an old man, who had for four years been suffering from left inferior dental neuralgia. One and a quarter inches of the nerve were removed, as in the preceding cases;

perfect temporary relief was followed in a few months by a return of the trouble.

Case VI. was that of a lady, seventy-two years old, with left infraorbital and inferior dental neuralgia for many years. These nerves were removed, with complete relief for six months, after which there was a return of the trouble.

The wounds healed by primary union. All the patients felt repaid for the trouble and discomfort of the operation by the relief afforded, though it was only temporary.

Before going farther it will be well to describe the location of the different foramina concerned with the various operations for facial neuralgia.

The supraorbital foramen is situated at the junction of the inner and middle thirds of the upper margin of the orbit, and is right at the edge of the bone. Sometimes it is a mere notch.

The infraorbital foramen is situated one-quarter of an inch below the middle of the lower margin of the orbit.

The mental foramen is situated at a point below and between the roots of the two lower bicuspid teeth, one-half an inch above the lower border of the inferior maxilla.

The inferior dental foramen is situated exactly in the center of the inner surface of the ramus of the lower jaw.

Primary Operation for Supraorbital Neuralgia.—Upon antiseptic precautions as to the hands and instruments of the operator and region of operation, an incision, about 1½ inches in length, is made through skin and fat, commencing near the bridge of the nose and curving upward and outward just above the eyebrow. Then with a blunt dissector or the handle of the knife the various branches of the nerve are dissected out as far as possible and cut off toward their distal ends. The trunk of the nerve is then traced up to the foramen, drawn out of the latter, and divided. Hemorrhage is easily controlled by packing with gauze and by pressure for a few minutes. The edges of the wound are then brought together with either fine catgut or silk, and a sterile dressing is put on.

Primary Operation for Infraorbital Neuralgia.—After the usual preliminary preparation of cleansing, an incision is made from the lower edge of the orbit vertically downward and a little outward over the foramen for about 1½ inches through skin, fat and muscles, to the periosteum. Then with a blunt dissector the three principal branches of the nerve, the external, internal and inferior, are exposed, dissected out as far as possible, and cut off toward their distal ends. They are then gathered up and traced to the foramen, from which the main trunk is drawn and divided. Hemorrhage from the infraorbital artery is profuse, but is controlled as before mentioned. The wound is then stitched together and dressed.

Operation for Inferior Dental Neuralgia.—After the usual preparation of cleansing and sterilization of hands, instruments, and field of operation, an incision is made beginning at a point one finger's breadth (½ inch) below the zygoma vertically downward in the midline of the ramus, about 1½ inches long, through the skin and fat to the masseter muscle. The edges of the wound are then drawn apart with retractors and a U-shaped flap consisting of muscle and periosteum is raised from the bone. A half-inch trephine is applied to the center of the ramus and the outer table of bone is removed, thus exposing the nerve, the proximal end of which is drawn out as far as possible and cut off. The inferior dental artery bleeds profusely, but is easily controlled by packing the cavity with gauze and leaving it till the next step of this operation is completed. This consists in making an incision 1½ inches long (the center of which should be opposite the mental foramen) along the lower border of the lower jaw. In this way is avoided the danger of cutting into the mouth and the resulting cicatrix shows very slightly. The upper flap is raised, the foramen is brought into view and the branches of the nerve are dissected out and cut off. The packing is then removed from the first wound (by this time the artery will have stopped bleeding) and the nerve is seized with forceps and drawn out of the canal its full length. The musculoperiosteal flap is brought down over the cavity in the bone and stitched in position with sterile catgut and the skin edges of both wounds brought together with the same suture material and a sterile gauze and cotton dressing applied.

In the secondary, tertiary, quartan, quintan, etc., operations upon the supraorbital and infraorbital nerves, the incision was made exactly in the line of the first incision and the superficial structures lifted on each side, but no nerve-trunk or well defined branches could be discovered. When the foramina were exposed there was found protruding from each a bundle of fibrous tissue which immediately spread out and mingled intimately with the surrounding periosteum. This had a white, glistening appearance on the surface next to the bone. When this tissue was pinched with forceps there was reflex action of the muscles of the eyelids and face, indicating a painful sensation on the part of the patient and showing that the sensory nerve filaments had been restored. A disk of this fibrous tissue one inch in diameter was removed from around the foramina. This method of procedure gave perfect relief in the secondary operations while it was only partial in the others; but it had the effect of causing the pain to be more amenable to the action of drugs, thus making life tolerable for some months. As the suffering became more and more severe, it also became less and less easily controlled by medicaments, and then the operation was justifiably repeated.

Smoke Nuisance in New York.—The continued use of soft coal throughout the city is commencing to create an irritation that the activities of the Health Board authorities cannot allay. May the coal strike soon be over.

MEDICAL PHOTOGRAPHY.[1]

BY MILTON FRANKLIN, M.D.,
OF NEW YORK.

The successful photographing of medical subjects calls for a method of handling more or less unique in the practice of photography. It is my purpose in this paper to describe briefly the essential points in the apparatus and technic which are of value in this branch of the subject.

Almost any camera box can be used except those using roll films and small hand cameras which can not be focused. The exact type will depend on the particular class of work to be done. When the camera is to be used in only one location, a studio box with adjustable stand will be found the most convenient; but, on the other hand, when the pictures are to be taken at various places, an ordinary landscape camera provided with a firm tripod will be preferred. Rubber caps on the tripod tips or some form of tripod stay to prevent slipping on smooth floors will be a great convenience. It is of the greatest importance that the camera be provided with a focusing screen, so that the exact appearance of the picture may be known before the exposure is attempted. Rising and sliding fronts and swing backs are of little value, especially when the stand is capable of wide adjustment. A large lens board should be a feature, as most of the modern lenses have large flanges. The main point is rigidity, and the absence of this factor will be greatly felt. A rack and pinion focusing arrangement will add somewhat to the convenience of working, but is by no means necessary. The matter of size is quite arbitrary, though smaller than 4x5 inches will be found unsatisfactory, especially when full-length figures are attempted, and sizes larger than 8x10 inches will be found to be inconvenient to carry about, besides being expensive. On the whole, I find the greatest convenience in a camera 5x7 inches or 6½x8½ inches. With such a camera any plates of smaller size may be used in kits, and larger pictures may be obtained by the simple process of enlargement.

As in all photography the lens is the most important item, and upon it depends almost the whole quality of the work as far as mechanical means can control the end. The errors which are likely to be encountered are astigmatism and curvature of field. I assume that chromatic and spherical aberration are corrected. Astigmatism has been so far eliminated in some of the modern lenses that they are for all practical purposes anastigmatic. Curvature of field cannot in the nature of things be entirely overcome, and notwithstanding the wide claims made by the various manufacturers, an examination of any lens will disclose a different focal plane at the margin than at the center of the plate. The radius of the sphere has been so lengthened in some lenses, however, that the error, as far as practical results are concerned, is corrected over a reasonably wide field.

The qualities in a lens that are important to us are speed, depth of focus, definition and focal length. Speed depends on angular aperture, and as this varies as the square of the diameter for any focal length, it will readily be seen how two speeds may be mathematically compared. The ratio of the diameter to the focal length is the usual mode of expression for speed. The U. S., or Uniform System, is based upon this formula. In this system an aperture of F/4 is arbitrarily chosen as the standard, and given the U. S. No. 1. Each number ascending requires twice the exposure of the one preceding, or, in other words, has one-half the area; thus, No. 2 would be equal to F/5.656, No. 4 to F/8, No. 8 to F/11.31, etc. There have been various other systems of stops invented, notably those of Dr. Rudolph and the Voigtlaenders, in which it is sought to establish a minimal stop at which a lens can be employed and thence to work out a series of ascending stops with descending exposures, the opposite to that in the U. S.

Depth of focus is the quality of a lens which permits objects at different distances from the lens to be sharply focused in one plane. This quality does not in reality exist, but in practice it is approximated in lenses of very short focus and in others in which small apertures are used. In the case of short-focus lenses, the displacement of the screen for objects nearer than the parallax is so small that all objects excepting those very near the lens appear to be focused with equal sharpness. When small stops are used in a lens the apparent depth of focus is due to the fact that, owing to the small angular aperture, there is little divergence of the rays at small distances on either side of the focus and all images appear equally sharp. The quality is possessed by all lenses equally and independently of any type of construction, and is proportionate to the ratio of the diameter of the stop to the focal length in lenses of equal focus.

Here we might consider an important point, the speed desired in a lens for medical purposes. Depth of focus, as has been shown, will decrease in the same proportion as focal length and aperture are increased. Given a constant focal length, the depth will increase directly as the speed or aperture is diminished and *vice versa.* It will be found in practice that, with ample focal lengths for the different sized plates, a lens working at an aperture of F/8 will give the best general average of these qualities.

Definition is the quality in a lens which enables it to reproduce minute detail. It depends directly on the degree of correction for chromatic and spherical error and inversely on the degree of irrationality of the spectrum left outstanding. The presence of astigmatism will greatly reduce definition, especially at the margins of the field.

The focal length should be ample for the size of plate to be used and at least equal to one and one-half times the longest side of the plate. Too short a focus would result in distortion of perspective when an object is near the camera.

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[1] Read before the Harlem Medical Association, 1901.

To sum up, the ideal lens should be free from astigmatism, chromatic and spherical aberrations and curvature of field. It should give a perfectly sharp image over the whole field of the plate and possess reasonable speed. By reading the catalogues of the different lens-makers, reference will be found to many such lenses; in fact, the reader will be struck by the fact that only lenses possessing all these qualities are made at all. As a matter of fact they exist only in the catalogues, and I advise every one contemplating the purchase of an expensive lens to have it examined by an expert and its exact performance reported. This course will save time, money and annoyance.

Next to the lens in importance comes the shutter, as by its means control of the exposure is obtained. It should be capable of as direct action as possible, without the intervention of too much mechanism between the hand and the release. It should be capable of operation with little or no concussion and should be of simple construction to insure its being easily kept in order.

The plates used must often be of the utmost rapidity, but as very rapid plates yield results inferior in range of tone, slower ones should be used whenever the light will permit. Very slow plates are likely to exaggerate contrasts and should be avoided. In the solar spectrum the yellow between the lines D and E has the greatest visual intensity, while the other colors become less brilliant in a descending curve on either side toward A and H. The blue between F and G has little more intensity than the red, but the violet sinks into invisibility at H. A photograph of this spectrum on an ordinary plate will give a very different picture; here the yellow will appear quite dark, while the blue and violet will be quite light, and where the violet disappeared at H there will be a continuation of the photographic image. This is due to the fact that the emulsion of an ordinary dry plate absorbs only the colors blue, violet and ultraviolet in any quantity. Only the light rays which are absorbed by a sensitive emulsion will have any action on it. Vogel, however, has shown that rays absorbed by any substance contained in the emulsion will also cause chemical change, and upon this principle all color-sensitive plates are made. Different dyes are mixed with the silver emulsion, and by absorbing light rays of different lengths they cause the plates to be acted upon chemically.

In negatives of medical subjects abundant and minute detail is the most important requisite, being carried to such an extent in some cases as to reproduce the pores and minute hairs. When the negative is of a skin lesion, a superficial wound or other condition purely of the surface, detail with almost even lighting over the whole surface will give the most satisfactory results, the shadows being relatively unimportant. On the other hand, when the condition involves swelling, unevenness of surface, deformity of outline, etc., etc., light and shade will play an important part, giving modeling to the picture. Some subjects, as, for instance, preserved specimens, instruments, or the details of an operation, will require a combination of lighting and detail. It will be obvious from the foregoing that the subject of lighting is of much imporance; indeed, I do not hesitate to say that when this detail has been mastered the rest will be found to offer little difficulty.

In most offices the available light will come from a window or windows on one side of the room only. Skylights, slantlights, or, in a word, elaborate galleries are as a rule out of the question, so I shall confine my remarks to the conditions as they exist. Unfortunately a side light, especially one of limited extent, is about the poorest that can be had. It will be found that a subject posed so as to have one side of the figure lighted by such a light will have the other side in complete darkness as far as the resultant photograph is concerned, generally rendering the picture useless. There are various means of overcoming this fault in greater or less degree, the first and most simple being the employment of a reflector consisting of a frame carrying a plane of white cloth or paper so arranged as to reflect light from the window upon the shaded side of the subject; this is a very convenient and available method, and when the light is of sufficient strength it will be found to serve the purpose fully. In such a case, however, it will be necessary to interpose a screen between the source of light and the subject or the shadows will be too hard; the screen consists of a piece of thin white cloth supported on a wire or wood frame, and its use will soften the shadows and reduce the contrasts. When the natural light is insufficient, some form of artificial light must be resorted to; of the latter the most powerful is unquestionably the electric arc, which must be a large one of not less than twenty-five or thirty amperes capacity and must be fitted in some form of reflector. The disadvantages are the great size, cost, and immobility, which latter will result in the formation of too hard shadows. Besides this, it cannot be moved from place to place and, as it requires special wiring on account of the high current it employs, it cannot be used excepting in special places. Next comes the calcium light; this is subject to the same criticism as the electric light, with the exception that it can be used at any place. The magnesium flash lamp is perhaps the nearest approach to the ideal that we are likely to find; this instrument possesses the advantages of the lights already mentioned and none of the disadvantages, being extremely inexpensive to operate, weighing only a few ounces; it can be held in the hand and moved about, giving so brilliant a light that the fraction of a second suffices for an exposure. Whichever light is used it will be necessary to interpose a screen, as already explained, between it and the subject. The magnesium lamp should be of the magazine pattern, which consists essentially of an alcohol lamp in which a flame is kept burning, a magazine in which a charge of pure magnesium powder is placed, and an arrangement whereby the powder may be blown through the flame by means of the breath. It will not be out of place for me to mention here that compound flash powders should never be used in such a lamp, as a most violent explosion would result in that case. Lamps, such as described, are to be found on the market ranging in cost from $2.00 to $5.00.

In situations in which only a side light is possible, my method of procedure with a magnesium lamp is as follows: The subject is placed at the side of the light and at a distance which will ensure even illumination over the whole area to be photographed. On the shadow side of the subject, somewhat to the front, at a distance of from two to seven feet, depending upon how large an area is to be included, a screen is placed. The camera is now focused as sharply as possible with the natural light and the diaphragm of the lens is regulated so as to require an exposure of about one-half a second on the lighted side. The plate having been placed in the camera, the shutter is set and the lamp is held in position behind the screen. The shutter release is held in one hand and the lamp in the other. The shutter is opened, the lamp blown and at the same time moved about behind the screen, and the shutter is closed. Some practice will be necessary to acquire this trick, but when it is once learned it will amply repay any time spent. Pure magnesium is to be preferred to any compound, as it can be slowly blown through the lamp and in this way the light can be regulated to the utmost nicety. When the natural light is strong, the lamp should be just sufficient to illuminate the shadow a little less than the high-light, but when the light is feeble the lamp can be made to give the high-light. The exact amount of powder to be used will depend on the working rapidity of the lens and plate, and on the distance of the lamp from the subject, remembering that the light increases inversely as the square of the distance. In many cases two lights on different sides will be found necessary. Compound flash powders may be used without any form of apparatus whatever. They are not to be recommended for this work as they are apt to startle the subject into moving, and the single explosive flash does not permit of regulating the shadows. In practice many peculiar contingencies will arise which no amount of abstract information can cover, but a little thought will generally suggest methods.

A head rest will always be necessary. This may be on a separate stand or may be attached to the back of a chair. The background should never be black, as that would result in halation wherever a white object were strongly illuminated against it, and much uncertainty of outline in the case of a dark head. A white one would offer objections quite as bad in the opposite extreme. A medium or rather dark gray will prove of the most general utility.

When a skin lesion is evidenced only by difference in color, the color may be exaggerated in the photograph by employing a screen of complementary color. This will necessitate lengthening the exposure. Isochromatic plates will be found useful when it is desired to reproduce color values.

All exposures should be rather full than otherwise, and development should be slow and complete. The great requisite, I repeat, is detail, and this can be had throughout the shadows only by, in a measure, sacrificing contrast. Overintensity can be reduced; thinness, the result of underdevelopment, can be corrected by intensification; but when the negative is under-exposed the case is as a rule hopeless. It is advisable at all times to make at least two negatives of every subject and to finish both carefully. Especially should this be done when any value is attached to the case or when any difficulty would be encountered in getting another photograph. There are numerous developing agents and formulæ available, and as a rule all can be made to give good results. Pyrogallol with sodium or potassium carbonate is the most populer. Ortol, methol in combination with hydroquinone or ortol, glycin, pyrocatechin, and rodinal are all capable of yielding satisfactory results. A knowledge of the actions of the different ingredients of a developer will prove of great benefit to anyone attempting photography in any of its branches. This is all, however, pure photographic technic and I cannot dilate on it here.

Given a good negative, little of importance remains to be done. The printing process, to be sure, should be executed with the greatest possible care as it shows the result of our labors, but with a good negative the rest is practically assured. Photographs may be printed and finished in various ways; the method will depend on the use to which the print is to be put. Only such methods should be chosen as give the greatest amount of detail and the widest range of tone, and foremost among these may be mentioned the Autotype or Carbon process. This method will give prints in many different colors and will more nearly approximate the limits in detail and gradation in the negative than any other process. Prints by this process, owing to the fine texture of the surface, may be used for reproduction, but the additional labor entailed in production and the length of time required to complete them bar them from any extensive application to our purposes. Next should be mentioned the Platinotype process. This gives very excellent results as far as detail and tone are concerned, is easy and rapid of manipulation and yields prints of great beauty and permanence. These prints are not suitable for reproduction on account of the texture of the paper, but may be used for records. Gelatinochloride papers, on account of the smoothness their surfaces are capable of attaining, are quite suitable for reproduction purposes, the prints are faily full of detail and have good tones, though somewhat contrasty; they are not permanent. These prints are to be finished for reproduction by being squeegeed upon a ferrotype or other smooth surface plate.

When it is desired to produce prints in the colors of Nature, photography offers a ready and convenient means in the three color process. This is based on the theory that all colors are one of the three primary, red, green, and blue-violet, or a mixture of them. Three negatives are made, one for each primary color. The negatives are made through screens which absorb all the light except that which it is desired to take. From these negatives three printing blocks are made which are inked up, each in its primary color, and printed one upon another. In this way each color will appear in its proper place and proportion.

Photomicrography, notwithstanding the many opinions to the contrary, is a rather difficult art, for, while it is possible to do some very satisfactory work at low magnifications with ordinary photographic apparatus combined with a microscope, it will be found that work done on more elaborate apparatus will show a distinct improvement on the former. When it is desired to do work with such improvised apparatus as just described, the method of procedure is as follows: The camera and microscope are placed upon a table, the tube of the microscope being placed horizontally and the lens being removed from the camera. The end of the microscope tube is placed at the center of the lens board of the camera through which it projects and provision is made for the exclusion of all extraneous light. The source of light, which may be anything from a kerosene burner to an arc light, is placed at a distance from and on a level with the center of the Abbe condenser. A condensing lens is placed between the light and microscope to parallelize the rays falling upon the Abbe condenser. A color screen should be placed in the path of the light, as the best results are obtained when the exposures are made with light rays of one wave length. The mirror of the microscope is of course removed or swung to one side. It is of importance that the ground glass screen of the camera be parallel with the stage of the microscope, that the light, condensers and lens be accurately focused and centered, and that the aperture of the Abbe be made to exactly correspond with that of the lens by means of the diaphragm. The object having been located on the stage, the image is carefully focused on the screen of the camera. The plate is then adjusted and the exposure made. This is accomplished by means of a shutter made of a piece of thick cardboard placed in the path of the rays so as to prevent any light from entering the microscope. The shutter is deftly raised and the light permitted to enter the camera for the length of time necessary to make the exposure and quickly replaced. An isochromatic plate of medium speed will give good results in the majority of cases. The color of the screen will be determined by the stain of the slide to be photographed, and green will be the most generally useful for bacteria. The length of the exposure will depend on illuminant, the working aperture of the lens, the amplification, the thickness and stain of the object, the color and density of the screen, and the rapidity and color sensitiveness of the plate.

Radiography hardly comes within the scope of this paper and besides is so thoroughly described and elucidated in many excellent treatises that I can afford to omit it here.

It may appear that I have emphasized too fully what is apparently abstract photographic technic; but as a matter of fact it is exactly this technic which is of paramount importance in medical as distinguished from general photography, in which latter it may be ignored to a greater or less degree. This is exemplified by the fact that scientific work calls for the highest degree of mechanical performance in the apparatus used, whereas in general photography artistic effects are sought, and the end is often better served by eliminating mechanical perfection.

153 West 46th Street.

MEDICAL PROGRESS.

THERAPEUTICS.

Treatment of Aneurism with Gelatin.—Gelatin has not yet conquered the therapeutic field assigned to it, and in the reported observations of its effects there are many discrepancies as to its curative value; yet the experience of C. MANCINI (La Riforma Medica, May 2, 1902) in its use is sufficiently encouraging to suggest the possibility of further advance in the treatment of aneurism with gelatin. Two cases are described, in both of which there was temporary amelioration of the subjective symptoms, and in one an actual decrease in the size of the tumor. In the first case, one of fusiform aneurism of the aortic arch, gelatin was administered hypodermatically, 5 cubic centimeters of the solution (gelatin 30; water 100; carbolic acid 1); being injected in the gluteal region daily for five days; but, unfavorable symptoms appearing, this method of administration was abandoned and daily enemata of a 50-per-cent. solution were substituted, beginning with 10 grams and increasing to 50 grams. This treatment was followed by marked improvement. In the second case, one of aneurism of the ascending aorta, enemata failed to produce any effect; but hypodermic injections of 10 cubic centimeters of a 30-per-cent. solution every four days brought about improvement in the subjective symptoms and decrease in the size of the tumor. In both cases, hypodermics were followed by some rise of temperature and a variable amount of pain. Both patients were on ordinary diet during the gelatin treatment and no other remedies were used; in the first case the usual drugs, combined with rest and a milk diet, had been essayed without noticeable improvement prior to treatment with gelatin. The first case came to autopsy, and stratified thrombotic masses were found in the aneurism, which the author believes were due to the coagulating power of the gelatin. He concludes that, while the results obtained were not permanently favorable, these cases demonstrate that gelatin is absorbed, that it coagulates blood, is not dangerous, and, in the treatment of aneurism, has a direct influence upon its content.

Rachicocainization in Sciatica.—In an article dealing with this subject, A. Magri (Gazz. degli Osped., May 4, 1902) states that sciatica can be permanently cured by intraspinous injection of cocaine. The method used by Cavazzani of Venice, who has effected a cure in eight cases, is described by the author as follows: After careful disinfection of instruments and operative site, the cannula of a large Pravaz syringe is introduced between the third and fourth lumbar vertebræ, the escape of cerebrospinal fluid indicating when the proper point has been reached. Two to three grams of the fluid are allowed to flow into a porcelain receptacle in which two centigrams of cocaine hydrochlorate in powdered form have been placed. This quickly dissolves in the cerebrospinal fluid, and the whole is then drawn into the syringe and slowly injected. The after-effects of intraspinous injection of cocaine are said to be entirely absent or are reduced to a minimum when this method is followed. The mechanism by which the cure is effected has not as yet been satisfactorily explained. By some it is believed to be due to a leucocytosis which is generated in the cerebrospinal fluid, inducing modifications in the transmission of dolorific stimuli.

Chloride of Gold Treatment of Localized Tuberculosis.—After having enjoyed a wide range of therapeutic application, the chloride of gold has almost dropped into oblivion. This state of affairs is not a just one, if judgment may be formed in accordance with the observations of G. Bué (La. Sem. Méd., 1902, No. 17). He states that it has a general antiseptic power equal to that of iodine compounds and shows a special predilection toward the bacillus of tuberculosis in topical application. Its value in the local treatment of scrofulous ulcers has long been known. Bué extends its use to adenopathy, non-suppurative, and cold abscesses, by injection. His solution contains chloride of gold and chloride of sodium, each 1 gram, and distilled water 50 grams. Into the center of non-suppurating glands he injects from a half to one cubic centimeter of this solution every eight hours. Aspiration and evacuation of suppurating glands and osseous abscesses are followed by the injection of 1 cubic centimeter of the gold solution twice or thrice a week, the needle-hole being closed with cotton dipped in collodion. As the suppuration decreases, the frequency, quantity and strength of the injections are diminished. Bué finds that from four to twelve injections will cure the tuberculous glands and that in other lesions a complete, rapid cure is soon established, so that the mass becomes a mere nodule, after from ten to twenty injections. No bad after-effects have been observed. In tuberculous laryngitis this salt does not act as well as the other well-known measures.

A New Silver Compound.—In order to avoid the irritating effects of silver nitrate and still preserve its valuable antiseptic qualities numerous endeavors have recently been undertaken without any very remarkable results. A. C. Barnes and H. Hille (Med. Rec., May 24, 1902), however, report the formation of a silver vitelline which seems to answer many of the requisites. They first derive a proteid, called gliadin, from wheat, and then transform this proteid into another by chemical processes, securing a proteid which is classified as a vitelline. A chemical combination is then formed with silver nitrate resulting in the preparation of a silver vitelline which has peculiar qualities. It contains 30 per cent. of silver and has a remarkable solubility, an ounce of it being completely soluble in two drams of water. These solutions do not precipitate albumin or sodium chloride and hence can have no coagulating or caustic effects upon mucous membranes. Its penetrating value is thus greatly enhanced and this has been demonstrated by experiment. Extensive trials have been made in the treatment of various inflammatory affections of the genito-urinary tract and of the eye with most gratifying results. A 1-per-cent. solution may be used in acute gonorrhea without any irritating effect, but with a decided immediate improvement.

Turpentine in Bleeding from the Uterus.—The hemostatic properties of the essence of turpentine have long been known, notably through Bilroth in 1883, but it is now little used. A Russian physician, L. F. Lienevitch (La Sem. Méd., 1902, No. 17), has been systematically employing it for five years to combat hemorrhages from the uterus. After having opened the neck of the uterus with a dilator, he fixes it with volsellum forceps and passes into the cavity of the cervix a tampon soaked in a solution containing 1 part of carbolic acid and 3 parts of glycerin, and then proceeds according to need to the further opening of the neck. After this is done he introduces into the cavity of the uterus a mass of iodoform gauze, 5- or 10-per-cent. strength, sufficiently large and long to fill the cavity completely, having previously soaked it in the turpentine. The outer extremity of this piece of gauze is in the vagina, which is carefully cleansed of all the excess of turpentine which runs out during the introduction of the gauze. A vaginal tampon of small dimensions is then inserted and the woman is told to remain in bed for five or six hours. At the end of this time when the patient begins to feel severe uterine colic, the gauze should be carefully withdrawn. In general the bleeding will be stopped in a definite manner and after a few days a normal mucous and bloody secretion is seen, abundant in quantity. Occasionally it is necessary to repeat this procedure when the bleeding recurs. The author has never seen the least sign of intoxication or any other unfavorable phenomenon follow this method of treatment. The procedure in question has proved itself particularly efficacious in cases of hemorrhage due to interstitial fibromata of the uterus and to inflammatory diseases, if the tamponade can be carried out without much dilatation of the os. He never yet has employed it in hemorrhages after delivery through fear of an embolism. He also notes the report of another Russian surgeon, M. B. Izatchik, of a case of severe nose-bleed which had resisted plugging of the fossæ and the internal use of ergot, but which was absolutely controlled by tampons soaked in turpentine.

Treatment of Chronic Glossitis.—The present knowledge of the etiology of this condition is so imperfect that the therapy has not advanced proportionately with that of other diseases. A new suggestion for its treatment is made by M. L. Ravitch (Jour. Am. Med. Assoc., May 31, 1902) as follows: After painting the patient's tongue with a 15 per cent. solution of silver nitrate or a 5-per-cent. solution of chromic acid, the patient is told to hold the wet positive sponge electrode in one hand while the negative metal electrode is rubbed over the painted diseased areas for from ten to fifteen minutes. The action is thus explained: The silver nitrate is separated into the silver cation which goes to the negative pole and the nitric acid anion which does not separate as such, but decomposes the water present in such a way as to produce nitric acid and oxygen. This migration of the ions in opposite directions causes a deeper penetration of the nitric acid into the tissues and therefore a more complete effect. A similar action takes place when chromic acid is used. The author reports a successful result from this method in several obstinate cases of non-specific leucoma, keratitis, leucoplakia, chronic eczema and glossitis. The pain is quickly relieved, the hyperemia subsides, and the patches disappear. From twenty to thirty applications are necessary.

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No. 111 FIFTH AVENUE, NEW YORK.

Subscription Price, including postage in U. S. and Canada

PER ANNUM IN ADVANCE	$4.00
SINGLE COPIES	.10
WITH THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, PER ANNUM	8.00

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LEA BROTHERS & CO.,
No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK.

SATURDAY, JUNE 21, 1902.

VON BEHRING'S IMMUNIZATION AGAINST TUBERCULOSIS.

A PAMPHLET lies before us which embodies the results of what would appear to be one of the most painstaking and, judged by its findings, one of the most weighty of systematic investigations in experimental therapeutics. We refer to the report of the work on tuberculosis conducted by Von Behring and his associates during the past seven years at Marburg. Long waiting is apt to heighten expectations and on this account often leads to unreasonable disappointment; but the most gratified of Von Behring's readers will be those who have most eagerly awaited the record of his work which is now available. "Is it now proven," Von Behring asks his readers, "that individuals of the bovine family can be voluntarily immunized against tuberculosis, so as to be able to withstand infection with a virus which is fatal to control animals?" The proof which precedes the question commands an affirmative reply.

Not even Koch's hypothesis concerning the duality of human and bovine tuberculosis can rob this reply of its formidable value, for the prevention of tuberculosis among cattle alone is an end in itself and will constitute an immense gain to the civilized world. But Von Behring heightens the striking effect of his promise of immunity to cattle by undertaking to prove that tubercle bacilli of human origin are not always harmless to the genus *Bos*, but are capable of producing in the latter a tuberculosis perhaps slightly different in intensity but of the same essential nature as that following infection with the virus of bovine tuberculosis itself. Thus we have in Von Behring's work, accepting it in its entirety, a brilliant discovery in animal therapeutics reflected across an immeasurable field in human therapeutics.

While groups of tubercle bacilli may differ in virulence and vitality according to the origin and treatment of the cultures employed, Von Behring calls attention to the want of striking morphological and cultural variations, to the identity of the anatomical and bacteriological findings after experimental inoculation of guinea-pigs and puppies, to the successful inoculation of cattle with tubercle bacilli derived from human hosts, to the possibility of immunizing cattle against bovine tuberculosis by means of the virus of human tuberculosis. Furthermore, the results of chemical analysis favor the notion of chemical unity and strengthen the foundations of the theory of bacteriological unity. These are some of the considerations that necessitate a rejection of Koch's hypothesis that tubercle bacilli virulent to cattle are harmless to man; it is eminently desirable that the public be made acquainted with this view and with the weight of authority which supports it, in order to offset the effects of the notoriety given to Koch's utterance at the London Congress. Reverting to the subject of preventive inoculation against tuberculosis, it is of interest to note that Von Behring's inoculation is similar in principle to that of vaccination rather than to the preventive inoculation employed in diphtheria or tetanus. In other words, immunization is ascribed to an alteration in the biological condition of the animal due to the infection to which it is voluntarily subjected, and is not attributable to the presence in the organism of a substance separable from the virus; it is an isopathic self-immunization in contradistinction to an immunization by antibodies possessing antitoxic or antibacterial properties. Von Behring states that susceptibility to tuberculosis can be materially reduced by a single inoculation of a weak or modified tuberculous virus. By a thorough preliminary study of the virus employed severe constitutional reactions can be avoided. The usual mild reaction once over, the animal may be regarded as again in perfect health; permanent pathological changes are sought in vain at autopsy even after much observation.

As a measure of the progress of the self-immunization, the Marburg experimenters employed the tuberculin test. Under the influence of the immunization infection, for so the preventive inoculation must be regarded, susceptibility to tuberculin is at first increased, as manifested by fever, cough, loss of weight; as the symptoms of the immunizing infection subside the normal state of health is reëstablished and the susceptibility to tuberculin disappears. Von Behring does not forget that there is a difference between the voluntary infection of animals in the laboratory, where the virus is introduced into the blood by subcutaneous or other means, and the infection of live stock under ordinary agricultural conditions, the latter involving a gradual invasion of the respiratory or digestive tract. What protects against laboratory infection need not necessarily afford safety against the forms of invasion against which, after all, one is really striving.

Von Behring has certainly furnished by strictly scientific methods the weapon of attack against bovine tuberculosis. He has produced a virus by means of which unprotected cattle can be caused to die of acute miliary tuberculosis in a reasonably brief period, and he has prepared a weakened virus which has a saving power against the deadlier microbic poison. The conjunctive use of these two substances has rendered possible the formulation of laws of immunization of animals. The time is now ripe for general coöperation in Von Behring's work for the purpose of collecting epidemiological statistics by means of which the practical worth of protective inoculation can be shown. In Von Behring's own province of Hesse-Nassau the collection of such statistics has already begun, with the cordial support of the Government. This movement is worthy of emulation in this country.

THE PROPER DRINKING OF ADULTS.

So much has been written, and more perhaps said, in these last few weeks concerning the proper feeding of infants in summer that it is with a certain feeling of relief that we turn to a kindred subject, the choice of the most innocuous of the thirst-quenching compounds which are offered so freely to the more adult on every side. For that a nickel plus a child is equal to a soda water fountain is an equation that does not require the higher forms of mathematics to demonstrate, and that it is not always good to look on the wine when it is red is biblical in its antiquity.

A wise man, this time from the West—a chemist in Chicago, has just come to the front, with a violent diatribe on the evils of the perennial fountain, an attack not only on the syrups that dwell therein, but also on the more modern, extra-uterine so to speak, egg-and-fruit combinations that are so pleasing to the eye and which make the apothecary's sign one of the few of those that do not fail in dry weather. It is not that the syrups are synthetic in their composition, for this they have been from the time that chemicals became cheaper than the natural fruit. Nor is it the undeniable fact that it is not conducive to health to fill up the stomach when overheated with a quantity of any iced liquid, but it is, he states, because the coloring matters now used, are "noxious," and injurious and that not only do they do harm in themselves, but also increase the evil by inducing a greater consumption "from the insidiousness of their opalescent charm and the sheen of their iridescent beauty."

This is unfortunate, but they certainly do look cool, and the eye is, in these cases, affected before the palate; few of us have outgrown our early recollections of the roseate circus lemonade and these *fin de siècle* summer drinks are neither stale nor flat, even if from a sanitary standpoint they are unprofitable. But the anxious parent has still, however, the old time series of vanilla and ginger, chocolate and the like, to fall back on, if she desires to shun the greens and the violets of the up-to-date pharmacy, to say nothing of the interrogative finger of root-beer, which points a warning from every bill-board and boarding in the vicinity. That she will undoubtedly encounter opposition is true, for, although self-preservation may be the first law of Nature, it lies dormant in the stomachs of most of us till later years, and young people, outside the castle of Chillon, seldom grow gray in a single night.

Experience has not always taught its lesson with the eruption of the wisdom teeth, and there were few tucks to let down in the hem of Rosamond's garments when she realized the inutility of her "purple jar"—so we fear that the warning of the Chicago chemist will avail but little, and that the words of parental wisdom will accomplish less, for youth will have its fling, and its soda too, and we must realize that even were there death in the cup the result would be the same, and the child and the nickel would be soon parted.

VISCERAL SYPHILIS.

AT the recent meeting of the American Medical Association at Saratoga the discussion of Dr. Stockton's paper on "Syphilis of the Liver" brought out opinions from many prominent men as to the significance and importance of visceral syphilis in internal medicine. Such excellent clinical authorities as the reader of the paper and Dr. Osler were decidedly of the opinion that visceral syphilis often remains unrecognized, to the discredit of the physician and the serious detriment of the patient. Dr. Osler said that the state of affairs as regards visceral syphilis is not unlike that which obtains for cerebral syphilis. When a practitioner says that he has not seen a case of cerebral syphilis for ten years it means that he has not recognized a case for ten years.

The neurologists have been the object of no little obloquy because of the well-recognized tendency among them to assume the existence of syphilis whenever there are serious signs of degeneration in the nervous system and no other readily discoverable cause therefor. It would seem, however, that perhaps the obloquy is due rather to the general practitioner who has refused to see the possibility of the existence of syphilis as the basis for obscure abdominal symptoms and so has missed the opportunity for brilliant therapeutic results in some cases that have proved absolutely obdurate to all other treatment. In the opinion of all who took part in the discussion at Saratoga, every year many cases of visceral syphilis fail to be recognized in this country and some of them come to a fatal termination because of consequent failure to try the therapeutic test of thorough and continued syphilitic treatment.

This is a serious and unfortunate state of affairs, for the most encouraging department of therapeutics in internal medicine is the use of specifics for syphilitic lesions. Pathological conditions that seem to be of the most serious kind and that simulate inevitably progressive affections hopelessly obstinate to treatment melt away under the specifics and the patient is not only relieved of serious symptoms but restored almost miraculously, it would appear, to good health.

Syphilis of the liver is apt to simulate two very serious conditions—alcoholic cirrhosis and cancer of the stomach or of the liver itself. As Dr. Osler stated, the risk of confounding alcoholic and syphilitic cirrhosis of the liver is much greater than has been imagined, because the patient with a history of abuse of alcohol is not unlikely to have also a history of syphilis. If the history of indulgence in liquor is learned at once, the question of syphilis may entirely escape the practitioner's mind. The ascites, jaundice, Godolphin facies and other characteristic symptoms of alcoholic liver cirrhosis may very well be present in a case of syphilis of the liver. The liver is usually enlarged in syphilis, but this may be hard to determine in the presence of a large ascites, and the diagnosis of alcoholic cirrhosis may be definitely made without a suspicion of the existence of syphilis as a causative factor in the case being aroused. Needless to say, the mistake is a serious one for the patient, for the symptoms of syphilitic liver cirrhosis are promptly relieved by specific treatment.

With regard to the confusion of cancer of the abdominal organs and gumma there is abundant evidence. Not only is this true of syphilis of the liver, but of almost any of the abdominal viscera. In recent years not a few needless laparotomies have been performed for gummata of the stomach and various parts of the intestinal tract. Antisyphilitic treatment should always be tried when abdominal growths of any kind are present. No possible harm can result from the judicious employment of mixed treatment for a few weeks. The delay is not sufficient to make the prognosis of any subsequent operation that may be determined on much worse. The possibilities of benefit are very great. In this matter certainly the experience of the neurologists should be a source of encouragement, for scarcely a week passes without the report of almost unhoped-for relief from severe nervous conditions in cases in which the history gave no prospect of any such satisfactory result.

The absence of a syphilitic history by no means disposes of the question of syphilis in the case. Not infrequently genital chancres and the secondary symptoms that follow give so little annoyance that they scarcely attract the patient's attention. Extragenital chancres are frequent and often remain unrecognized.

In a series of cases of general paralysis in Vienna in none of which a syphilitic history could be obtained Lange and Redlich showed that symptoms of undoubted tertiary lesions of syphilis could be demonstrated in the bones and other tissues of the patients in about 60 per cent. of the cases. As pointed out by Dr. Osler, the existence of symmetrical nodes on the tibia is one of the most helpful signs, though the occurrence of tertiary cutaneous lesions of syphilis may suggest the diagnosis.

This whole subject of visceral syphilis is of great practical importance. The announcement of a paper on syphilis of some special abdominal organ is apt to produce the impression in the general practitioner's mind that this is not meant for him but for the specialist in syphilology. As a matter of fact, the treatment of all manifestations of syphilis belongs to the family practitioner, who can alone prove the proper guardian of family and personal health during the many years the disease may produce serious effects. Syphilis is undoubtedly becoming more frequent in this country than formerly. The necessity for suspecting its presence as the basis of fever of obscure origin, of hepatic conditions of many kinds and of intra-abdominal as well as nervous symptoms of the most varied description, is therefore more insistent upon the practitioner. It is no credit to suspect and determine the presence of syphilis, but it is a sad disgrace to overlook it, as happens, it would seem, only too frequently under present conditions.

ECHOES AND NEWS.

NEW YORK.

Ophthalmia Prevalent in New York.—New York city is paying the penalty for its dirty excavations and the soft-coal nuisance. In an examination of 2,000 children in the public schools over 18 per cent. were found to be suffering from ophthalmia.

Tuberculosis Crusade in New York.—The Charity Organization Society has begun a crusade against tuberculosis. A Committee on Prevention of the disease, consisting of eleven physicians and thirteen laymen, has been appointed by the society. A secretary who shall devote his time to the committee is to be appointed. The entire volunteer body of workers and the expert agents and visitors of the society will contribute to the objects which it is desired to accomplish. The committee consists of the following: Dr. Hermann M. Biggs, Dr. Joseph D. Bryant, Dr. J. H. Huddleston, Dr. E. G. Janeway, Dr. S. A. Knopf, Dr. T. Mitchell Prudden, Dr. Andrew H. Smith, Dr. E. L. Trudeau, Dr. Egbert Le Fevre, Dr. Henry Herbert, Dr. W. G. Thompson, Dr. Ernst J. Lederle,Homer Folks, Prof. F. H. Giddings, Charles F. Cox, Edward T. Devine, Eugene A. Philbin, Robert Hunter, Herbert S. Brown, Mrs. James E. Newcomb, Mrs. Frederic S. Lee, Miss A. B. Jennings, Miss Ella Mabel Clark and Miss Lillian D. Wald and Robert W. de Forest and Otto T. Bannard, ex officio. The methods of work adopted by the new committee will be similar to those employed by the Tenement House Committee. In addition to an investigation of the social aspects of tuberculosis the work of the committee has been outlined in part as follows: The promulgation of the doctrine that tuberculosis is a communicable, preventable and curable disease; the dissemination of knowledge concerning the means and methods to be adopted for the prevention of tuberculosis; the advancement of movements to provide special hospital, sanatorium and dispensary facilities for consumptive adults and scrofulous and tuberculous children among the poor; and the initation and encouragement of measures which tend to prevent the development of scrofulous and other forms of tuberculous diseases.

PHILADELPHIA.

Reception to Dr. Rixey.—The Medical Club of Philadelphia gave a dinner June 14th to Dr. P. M. Rixey, Surgeon-General of the Navy. Following the dinner, which was presided over by Dr. E. L. Duerfaud attended by several of the naval officers at League Island in addition to a half dozen physicians, came a public reception at which over seven hundred physicians paid their respects to Dr. Rixey.

Country Branch for Rush Hospital.—The Rush Hospital for Consumptives has recently opened its country branch at Malvern under the most auspicious circumstances. The farm comprises 47 acres; there are seven buildings, two of which have been refitted according to modern methods. The farm will furnish supplies for both institutions. One house at Malvern will be fitted with a large sun-parlor and kept open during the winter.

Wants Municipal Hospital at Blockley.—Dr. J. V. Shoemaker, President of the Department of Charities and Corrections, has suggested to the city authorities a plan for the construction of a municipal hospital in connection with the Philadelphia Hospital. The plan includes the removal of the almshouse and insane department to some isolated portion of the city, probably Petty's Island in the Delaware River. This plan has been evolved to meet the objection that is raised from every locality considered as a location. The grounds mentioned are away from residence and easy of access.

CHICAGO.

Resignation of Dr. Gehrmann.—After ten years' service as director of the laboratory of the Chicago Health Department, Dr. Adolph Gehrmann has resigned and will take complete charge of the hygienic and bacterial departments of the Columbus Medical Laboratory.

Medical Alumni Reunion.—The Northwestern University Medical School has arranged for a reunion of its Alumni during the week of June 16th to 21st. Between four and five hundred have signified their intention to attend. Every day, from eight in the morning until six in the evening, clinics, dispensary demonstrations, hospital visits, amphitheater operations and college lectures will be given. The alumni banquet will be held at the Auditorium, June 17th, the thirty-sixth annual meeting of the Alumni Association in Davis Hall, June 18th, and the commencement exercises at the Auditorium, June 19th.

Investigation of Chicago Hospitals.—The results of the first day's inspection of local hospitals by the City Building Department shows the necessity for continuing the investigation until every institution of this sort in the city has been thoroughly examined. The inquiry into conditions at the Washingtonion Home on the West Side revealed several things which should not be permitted to exist. This institution is a home for inebriates, something after the order of the St. Luke Society Sanitarium, recently destroyed. Patients who are violent are confined on the third floor, in windowless rooms, the walls of which are lined with wood. The doors are of heavy wire and securely locked. In this part of the institution there are no fire-escapes, as the building is only three stories high. The main building, fronting on Madison Street, has no elevators, and the fire-escapes have been declared to be faulty by the inspectors. In case of fire, the attendants are expected to unlock the doors of patients' rooms, and then the patients may escape by the stairway or through a hatch in the roof. Twenty persons are now confined in this institution. Now that these facts have been presented to the proper authorities, it is hoped they will not wait for another probably fatal fire to compel the making of needed changes not only in the Washingtonian Home, but wherever else defects or improper management may be found. No hospital or sanitarium should be overlooked in this inspection. The investigation should be of the most searching kind, and the necessary reforms must be made with the least possible delay. The practice of keeping helpless or violent patients who have to be locked up on any floor higher than the second in these hospitals is to be condemned. The hospital ordinance should govern this important matter. Patients of this character should be placed where they could be rescued most readily in case of fire. In every other particular the hospitals should conform strictly to all the requirements of the Building Department.

Medical Instruction.—Dr. M. J. Seifert read a paper on this subject before a recent meeting of the Chicago Medical Society. He offered several propositions for consideration, and among them the selection of professors, entrance requirements, draft of the curriculum, conduct of medical instruction, and the selection of professors. He believes that no professor should be engaged except for scientific, personal and pedagogical fitness. He said it was surprising to notice with what utter disregard for teaching ability a professor is chosen. The true teacher must possess enthusiasm and predilection for his professional career, and for the subject taught, combined with talent, a clear and logical mind, good memory, keen perception, endurance, and determination to succeed. The qualities of the ideal teacher should be, in addition to those enumerated, physical strength, a physique free from deformities, and a large heart which will supply the necessary patience born of that magnanimous spirit which revels in the dissemination of knowledge at once scientific, practical and moral. Furthermore, the true teacher must have the ability to impart knowledge logically, always giving a complete presentation of his subject wherever possible, with due regard for all correlated branches of learning. This presupposed a thorough mastery of the subject taught, reënforced by a liberal general education.

Entrance Requirements.—A broad, liberal training is a *sine qua non* for successful medical work. At present one sees too many untrained minds in classes. It is astonishing to find how frequently students come without the slightest idea of the biological sciences, without the slightest knowledge of fundamental subjects, when, as a matter of fact, the medical course ought to be an extension of their previous physical, chemical and biological work. The problems of medicine are so complex that without sufficient preliminary training they cannot be attacked. A good preliminary training insures a good command of literary expression. This should be a five-year course. This seems very necessary to insure a steady, even assimilation of studies. In the present arrangement there is too much pressure, and the results are anything but satisfactory. What students need is time to think and observe independently. They are literally dosed with pages upon pages of reading and hours upon hours of lectures without being able to stop long enough to study the subject-matter carefully and to digest it thoroughly. Another great problem is physical culture for the medical student. A definite and regular system of physical culture should be made obligatory for each student. This is especially to maintain the physique of the student. No professor should be permitted to give a lecture course unless (*a*) he has something to offer that cannot be found in the text-books, except if by his force and personality he can instil life into the subject; (*b*) unless he can command the willing, spontaneous attention of his class by his individuality, style of delivery, and powers as a disciplinarian; (*c*) or unless he can present his subject in a clear succinct manner.

CANADA.

Medical Society of Nova Scotia.—The next annual meeting of the Medical Society of Nova Scotia will be held at New Glasgow on the 2d and 3d of July. Dr. John Stewart of Halifax is the Secretary, he having been chosen for that office rendered vacant through the lamented death of Dr. W. S. Muir, who for so many years discharged the duties of Secretary.

Militia Medical Course.—A course of instruction for Canadian militia medical officers has commenced at Ottawa with Surgeon-Major Gorrell of that city in charge who will deliver lectures every day. The following have registered for the course: Drs. Moorhouse and Watt of Winnipeg; Dr. Sands, Kingston; Dr. Hill, Montreal; Drs. Gardiner, McCarthy, Birkett, Williams and Shillington of Ottawa.

New Appointment at McGill University.—Dr. R. F. Ruttan, for eleven years Registrar of the Medical Faculty of McGill University, has resigned from that office, and has been appointed Professor of Chemistry in succession to Dr. Girdwood.

Appointments for Rockefeller Fellows.—Dr. W. M. Ford appointed Rockefeller fellow in bacteriology at McGill a year ago, has recently been appointed one of the investigators at the Rockefeller Institute at New York. The Medical Faculty of McGill will have the choice of his successor. Dr. P. G. Woolley, fellow in pathology at McGill University, has been appointed bacteriologist to the United States bacteriological laboratories at Manila.

Kingston Medical Society.—The following have been elected officers of the Kingston Medical Society for the ensuing year: President, Dr. W. T. Connell; Vice-President, Dr. Forster; Secretary, Dr. Mylks.

New Superintendent for Montreal General Hospital.—The Medical Superintendent of the Montreal General Hospital, Dr. E. M. von Eberts, will leave that institution on September 1st, after a service of many years. He will be succeeded by Dr. W. G. Turner, the senior house surgeon, who ever since his graduation from McGill University two years ago has been connected with the General Hospital.

Changes in Ontario Asylum Officials.—Dr. Reynolds, Assistant Superintendent at the Asylum for Insane, Hamilton, died recently at Baltimore, and as a consequence several changes have been rendered necessary in the staffs of the various asylums in the Province. Dr. Beemer, Assistant Superintendent of the London Asylum, has been made assistant at the Hamilton Asylum. Dr. Bell of the Toronto Asylum has been transferred to London, and Dr. J. C. Mitchell, Enniskillen, has been appointed Dr. Bell's successor at Toronto. Dr. Mitchell is the president-elect of the Ontario Medical Association.

New Medical Staff, Royal Victoria Hospital, Montreal.—The following fifteen new appointments have been made to the house staff of the Royal Victoria Hospital at Montreal to run to August 31, 1903: Admitting officer, Dr. A. G. McAuley; medicine, Drs. Colin K. Russell, W. W. Francis, J. R. Byers, J. C. Colby; surgery, Drs. E. Penner, E. J. Mullailey, J. D. Dixon, J. L. D. Mason; ophthalmology and laryngology, Dr. Newbold C. Jones; gynecology, Dr. James R. Goodall; anesthetist, Dr. L. C. Harris; locum tenens, Drs. Herman K. Stockwell and J. A. MacKnaughton; externe in medicine, Dr. F. C. L. Cantlie.

Maritime Medical Association.—The approaching annual meeting of the Maritime Medical Association at Charlottetown, P. E. I., on July 9th and 10th promises to eclipse all other previous meetings. Amongst others who will contribute papers are: Dean W. B. Geikie of Trinity Medical College, Toronto; G. Clowes Van Wart, Fredericton, N. B.; J. C. Houston, Souris, P. E. I.; R. Macneill, Charlottetown; T. J. F. Murphy, Halifax; Andrew Halliday, Halifax; E. A. Kirkpatrick, Halifax; M. Chisholm, Halifax, and C. Dickie Murray, Halifax.

A Medical Library for Halifax.—The medical profession in Halifax proposes to have space for medical books in the new Public Library shortly to be erected in that city through the generosity of Mr. Carnegie. The late Dr. Charles Cogswell of New London, N. S., left $5,000.00 to the Medical Society of Nova Scotia, the interest on which is to be applied toward maintaining a library for the medical profession in that Province. The Halifax Medical College has lately received several donations of books and medical journals and it is proposed to form a committee of the College and of the Medical Society to carry the project to a successful completion.

Ontario Medical Association.—On June 4th and 5th the Ontario Medical Association held its twenty-second annual meeting in the city of Toronto. Dr. Newton Albert Powell, Toronto, presided. The meeting was one of the largest ever held by the Ontario Medical Association, nearly two hundred physicians being in attendance from different sections of the Province. One of the most interesting discussions of the whole meeting arose over the paper of Dr. Davison with regard to examinations for life insurance. The medical men seemed to be of the unanimous opinion that the life companies did not pay enough for the examinations. Dr. Davison, as medical director of a large old line company, deprecated the careless examinations often sent in to be passed upon, and emphasized the importance of examiners sending a private letter to the medical director which would always be held strictly confidential. After a long experience the companies had found it would be better for the examiner to give the examination paper to the agent and not send it direct to the head office. Dr. Davison gave some interesting statistics culled from United States and Canadian reports showing the large amounts medical men were drawing from the companies for life assurance examinations.

Annual Presidential Address.—Dr. Powell dealt chiefly with recent medical legislation in the Province of Ontario and the Dominion measure for a Medical Council which has been so successfully promoted by Dr. Roddick, M.P. He said that he had felt called upon as President of the Association to oppose the Jessop bill before the last legislature which sought to reform the Ontario Medical Council and do away with the Homeopathic representation in that body. As the Homeopaths had given up certain rights and a mutual agreement arranged with them years ago, he did not consider it fair dealing to wipe out their representation unless with their own consent. The parliamentary success of the Dominion Medical Council bill was assured, but he thought the measure had been so emasculated that it would not be of great weight either for good or evil. Dr. Powell also touched upon some matters of medical ethics.

Officers Ontario Medical Association for 1903.—President, J. C. Mitchell, Enniskillen; Vice-President, George A. Bingham, Toronto; Secretary, Harold C. Parsons, Toronto; Treasurer, Andrew R. Gordon, Toronto.

GENERAL.

Louisiana State Medical Society.—The next meeting of the Louisiana State Medical Society will take place in New Orleans April 23-25, 1903. The officers are as follows: President, Dr. Isadore Dyer; Recording Secretary, Dr. W. M. Perkins; Corresponding Secretary, Andrew G. Friedrichs, M.D., New Orleans.

Egyptian Medical Congress.—This, the first Egyptian congress, will be held at Cairo, December 19 to 22, 1902, under the patronage of the Khedive. The scientific program is supplemented by numerous social features, including specially-arranged trips up the Nile.

A New Prize.—At the International Medical Congress of 1903 it will be proposed to use the surplus of 40,000 francs from the last International Congress held in Paris as a fund for a prize to be awarded every three years at future Congresses.

International Congress for the Care of the Insane.—This Congress, which will especially consider the family care of the mentally diseased, will be held in Antwerp September 1 to 7, 1902.

Malaria in Italy.—The experiments in prevention of malaria by the railroad companies of Italy for the protection of their personnel in malarial districts have been most successful. Prophylactic measures were the wearing of metallic masks and veils and the distribution of quinine in pills or confetti. In Sardinia the 60 individuals so protected were entirely free from the disease. In Venice but 9 per cent. of protected individuals were affected with malaria, as against 60 per cent. in non-protected. Like favorable results were reported from all the districts controlled.

Sanitary Laws of Holland.—The Dutch law which requires the placing of a notice upon every house in which there is an infectious disease was strictly adhered to in the case of Queen Wilhelmina. At the palace of Loo the card indicating a case of typhoid was placed upon the wall of the palace near the lodge of the concierge, its removal following thorough disinfection of the premises.

Ninth International Congress for Prevention of Alcoholism.—As decided at the last Congress held in Vienna, the Ninth Congress will meet in Bremen, April 14 to 19, 1903.

Electric Light.—According to the opinion of a Russian physician, electric light is the least injurious to the eyes. He states that the more frequently the eyelids are closed ("winked") the greater the fatigue to the eye. This assertion is based upon experiments which showed that winking occurred by candle-light 6.3 times per minute; by gas-light 2.8; sun-light, 2.2; electric-light 1.8.

Cholera in the Philippines.—It is confidently expected that a modern mode of dealing with this scourge now ravaging these islands will be devised by the American physicians there in charge.

American Surgical Society.—The following officers have been elected for 1903: President, Dr. M. H. Richardson; Vice-Presidents, Drs. M. B. Carson and W. F. Mayo; Secretary, Dr. D. P. Allen; Treasurer, Dr. G. R. Fowler; Recording Secretary, Dr. R. H. Harte.

American Gynecological Society.—The following new members were elected at the recent meeting of this Society: Dr. George Henry Noble, of Atlanta, Ga.; Dr. Brooks H. Wells, of New York; Dr. Carlton C. Frederick, of Buffalo.

Obituary.—Dr. Edward N. Whittier died in Boston last week, after a brief illness. He was born in Gorham, Me., July 2, 1841. He entered Brown University in 1858 and graduated in 1862. He served in many campaigns and battles with the Army of the Potomac. At the close of the war he went to Boston and entered the Harvard Medical School, graduating with the class of '69. He was an instructor at the Harvard Medical School for many years.

Dr. Algernon Sidney Leonard, who died recently at his home, 131 McDonough Street, Brooklyn, in his sixtieth year, had been in practice for thirty years. He was a son of the late Moses G. Leonard of New York, a well-known politician. He leaves a widow and three daughters.

Passed Assistant Surgeon of the Navy Frederick Horner, Jr., died at Marshall, Va., as the result of a runaway accident. Dr. Horner had been on the retired list longer than any other medical officer and longer than any officer in the service, with one exception. He entered the Navy from Virginia as an assistant surgeon in May, 1851, and was retired in May, 1861, on account of incapacity for sea service.

Dr. Hallock R. Maine, of Brooklyn, died of pneumonia June 13th. He was thirty-seven years old and for several years had been visiting physician at the Kings County Hospital. He was a member of the New York State and Kings County Medical Associations. He leaves a widow and one son.

Selden H. Talcott, A.M., M.D., Ph.D., died last week, at his home in the State Hospital in Middletown, N. Y., of bowel and stomach troubles, with which he had been critically ill for three weeks. Dr. Talcott was born in Rome, N. Y., in 1842, and was graduated at Hamilton College in 1869. He entered the New York Homeopathic Medical College in 1870 and was graduated in 1872, being first in a class of thirty-six. In 1875 he received the appointment of chief of staff in the Homeopathic Charity Hospital on Ward's Island. He was also in charge of the medical division of the Soldiers' Home and also of the Inebriate Asylum in New York city. In 1877 he was appointed Superintendent of the State Hospital in Middletown, N. Y., which post he held at the time of his death. He was a member of the faculty of the New York Homeopathic Medical College as professor of nervous and mental diseases, and for four years lectured on these diseases at Hahnemann Medical College, Philadelphia. He was a member of several medical societies in this and foreign countries. He had travelled extensively and made a study of asylum management in Scandinavia, Great Britain and Germany, visiting from forty to fifty asylums in 1891.

Dr. George F. Carey died Tuesday, June 17th, in New York, following an operation for Bright's disease. He was sixty-six years old and was a specialist in diseases of the eye and ear. He was a graduate of the College of Physicians and Surgeons, and had been attached to the staffs of St. Francis, the Manhattan Eye and Ear and the New York Foundling hospitals.

SPECIAL ARTICLES.

BANQUET TO DR. STERNBERG.

It was a highly representative body that gathered last Friday evening, June 13th, at Delmonico's in New York to do honor and to pay homage to the retired Surgeon-General of the Army, George M. Sternberg. Representative practitioners of the East and the West, of the North and the South were present, and the occasion was a most enjoyable one.

Dr. E. G. Janeway, in his introductory remarks, first read a telegram received from Major-General H. C. Corbin, in which he offered congratulations to Dr. Sternberg and his sense of appreciation of duty well done. Further, in speaking of Dr. Sternberg and of his long life and many years of activity, Dr. Janeway remarked that on being retired at the age of sixty-four it could well be said that Dr. Sternberg did not retire on any grounds of insufficiency; he was not responsible for the date of his birth, and it was by an act of Congress only that he was forced to give up this particular line of activity. He expressed the hope, however, for this illustrious student of bacteriology, fellow of the American Association of Hygienists, Commissioner on the Study of Yellow Fever, author and worker, that many years would be left him in which he could carry on his work. Dr. Janeway said that it was a matter of pride for the American physician to point out the long list of achievements and attainments of their illustrious guest, which bespoke such a high mental endowment and was an evidence of work well done.

In response to this toast General Sternberg said: "Words fail me in which to express my high appreciation of the compliment you have paid me by making me your guest of honor upon this occasion. Such a compliment, coming to me from the leading members of the medical profession at a time when by the operation of law I have reached the end of my active service as a medical officer of the Army, is especially gratifying. Accepting this testimonial as evidence of your approval of my efforts for the promotion of medical science and of the interests of the Medical Corps of the Army, I thank you one and all most sincerely. At the same time I feel that the results accomplished have fallen much below my earnest desires and perhaps have not been commensurate with the opportunities I have had.

Surgeon-general George M. Sternberg (Retired.)

"My first feeble efforts in the field of investigation which has always presented the greatest attraction for me—the etiology and prevention of infectious diseases—were made at a time when no one in this country was prepared to give me instruction in methods of research and I was to a large extent thrown upon my own resources. The tubercle bacillus, the typhoid bacillus and many other well-known pathogenic micro-organisms had not yet been discovered and a most promising field of investigation was presented to my view, for I was strong in the belief that infectious diseases must be due to infectious agents capable of self-multiplication—*i.e.,* to living disease germs. It so happened that the principal problem which I was called upon to solve was one of the most difficult that has engaged the attention of investigators, and one in which bacteriological methods have proved to be of no avail except in establishing a negative proposition—*i.e.,* that yellow fever is not due to a micro-organism of this class. The time and persistent work devoted by me to an investigation of the etiology of this disease might have given more fruitful results if my attention had been turned in some other direction, but while I met with a serious disappointment in my failure to discover the yellow-fever germ, I have the satisfaction of knowing that my researches cleared the way for the subsequent demonstration by Reed and his associates of the method by which this disease is transmitted from man to man. From a practical point of view this is all we require to guide us to a successful measure of prophylaxis, as has been recently demonstrated in the island of Cuba.

"But I must not occupy your time by further reference to this portion of my life work. For nine years I have scarcely looked through a microscope, my time having been fully occupied by the important duties entrusted to my charge as Surgeon-General of the Army. While I have not been able personally to prosecute any researches having in view the advancement of medical science, it has been a source of great satisfaction to me that I have been able to provide the means and appliances for other medical officers of the Army to do so. When I commenced my research work I had to provide my own microscope and material of all kinds. There not only was no bacteriological laboratory or apparatus at any military post, but so far as I am informed none at any medical school or university in the country. At present we have a thoroughly equipped laboratory in connection with our Army Medical School in the city of Washington, at all of our general hospitals in this country and in the Philippines, and also at every military post of any importance throughout the United States. We also have a considerable number of medical officers who have been instructed at the Army Medical School, who are well prepared to take advantage of their opportunities for research work.

"The Medical Corps of the Army is to-day in a high state of efficiency and I am proud to have been the chief of this *corps d' elite* during a period when its efficiency and usefulness had been put to so severe a test. The profession, also, has reason to be proud of its members who are attached to the military service of the country. Our senior surgeons have been called upon to fill positions of great trust and responsibility during the past four years and have, as a rule, acquitted themselves with great credit. As chief surgeons in the Philippines, in Cuba and in Porto Rico, they have been to a large extent responsible for the administration of the affairs of the Medical Department and have been called upon not only to protect our troops from the ravages of infectious diseases, but to perform a similar service for the natives of the various islands in which American soldiers have been called upon to serve. In all of these islands we found smallpox to be widely prevalent and in all it has been practically stamped out. In Cuba yellow fever was a scourge which threatened to do us greater injury than the bullets of our foes. But thanks to Reed and his colleagues on the Board sent to study this disease, we now know how to prevent its extension and have practically stamped it out in the city of Havana, which has for many years been its principal endemic focus in the West Indies. In the Philippines bubonic plague has been kept in check by the strenuous exertions of our medical officers and the latest reports indicate that it has almost disappeared from the city of Manila. Unfortunately, Asiatic cholera has recently gained a foothold in Manila and the neighboring provinces. Colonel Maus, who is at present acting as Commissioner of Public Health, is fighting this scourge with every means known to science and hopes to be able to avert a serious epidemic.

"Time will not permit me to dwell further upon the achievements of our medical officers during and since the Spanish-American war, but I make bold to say that as sanitarians, as surgeons, as all-round practitioners of medicine, and as scientific investigators, we have in our ranks many medical officers who are an honor to the Corps and to the profession.

"I also point with pride to our general and post hospitals. The general hospitals at the Presidio, at Fort Bayard, at Washington Barracks, and at the Hot Springs, Ark., are models which bear comparison with the best civil or military hospitals in any part of the world. The same is true of our principal hospitals in the Philippines. In this country nearly every military post of any importance has a modern hospital well adapted to the requirements of the military service, provided with a well-equipped laboratory for clinical and research work, and an operating room which would be regarded with satisfaction by any surgeon accustomed to the precautions necessary for successful aseptic surgery.

"When I look back for forty-one years to the time when I entered the Army as an assistant surgeon and consider the great advancement in scientific medicine since that day, and the superior facilities which now exist for rendering efficient aid to the sick and wounded of our army, I cannot help regretting that I knew so little then and that now I have reached the end of my active career and, like an old work-horse, am turned out to graze at a time when the results of medical and surgical practice are so much more satisfactory. On the other hand I confess to a certain feeling of exhilaration and a disposition to kick up my heels at the thought that I am my own master and can graze in such fields as suit me best. One of my oldest and best friends, now seated at this table, will remember when at the mature age of nineteen years we left our rural homes in Otsego County for the purpose of teaching the young idea how to shoot in the New Germantown Academy in the State of New Jersey. When I graduated in medicine at the College of Physicians and Surgeons in this city my ambition did not extend beyond the hope of securing a living practice in the country. My first venture was at a little town on Long Island, where a vacancy was supposed to exist, owing to the recent death of an old and highly-respected physician. Apparently, I was not able to fill this vacancy, for my professional shingle was displayed for several months and I did not receive a single professional call. Not being appreciated in this conservative neighborhood I moved my base of operations to Elizabeth City, New Jersey, and was getting a little practice when the war tocsin sounded and my future career was determined by the favorable verdict of an Army Medical Examining Board as to my qualifications for duty as an army surgeon. Within three months I was engaged in infecting gunshot wounds with dirty fingers and unsterilized cold-water dressings, and in amputating the legs and arms of unfortunate soldiers who had sustained gunshot fractures in the disastrous battle of the first "Bull Run." We were all blissfully ignorant of pathogenic micrococci and bacilli in those days, but having had Willard Parker as my professor of surgery, and Sands as demonstrator of anatomy, I was not entirely unprepared for the responsibilities of the battlefield.

"It would perhaps have been more profitable if I occupied the time at my disposal upon this memorable occasion in speaking in some detail of the advancement of medicine and surgery since my student days; but most of you are better qualified to discuss this interesting topic than I am, and I am sure you will pardon me if my remarks have been more or less personal and reminiscent in character. I find it hard to realize that the country youth of my name who came to this city as a student of medicine in 1858 is here to-day as the honored guest of leading members of the medical profession in the United States, whose names are as household words wherever students of scientific medicine are assembled.

"I thank you, gentlemen, again and most sincerely for this kind testimonial of your esteem. Your endorsement of my life work is of more value to me than military honors or financial competency. I have at times felt discouraged and disposed to think that I have fallen far short of what might reasonably have been expected in view of my opportunities. But it is reserved for the very few to accomplish great things and the physician who has won the esteem of those of his profession who are best qualified to judge of his work may well be satisfied, although he realizes that he has but a small share in promoting the advancement of scientific medicine and the interests of our beloved and humane profession."

Dr. Alexander H. Smith, in response to the toast "The United States Army," said that its work spoke for itself. He had been struck, he said, with the parallelism in the career of Dr. Sternberg and of his own. Both were from New York State, both graduated from the College of Physicians and Surgeons, both settled in New York State to practise and thence both moved to New Jersey; and finally, at the call to arms, both entered the Army, where their paths diverged very widely. Dr. Sternberg was sent to New Mexico, and for three years was busy holding on his scalp. The Comanches, the Apaches and the Navahoes were to his west, and frontier warfare was being carried on incessantly. It was at Fort Ellsworth in Kansas that he met Dr. Sternberg for the first time, and he well remembers his hospitality in the little dugout in which he then lived, and has been proud to claim him as a friend from that time.

He himself had been successful among the Arapahoes and Cheyennes in keeping his own scalp on. Out there, face to face with the savage foe, the American soldier taught the Indian object lessons, and they then learned that an unscalped Indian is only a half-dead one, so they scalped him to be sure. He said that at the present time there was not a hostile Indian within the borders of the United States. They had been compelled to learn their lesson, and had become a responsible people. Dr. Smith suggested that a mental parallel might be drawn which would be of service in modern times.

He had watched the career of General Sternberg, and had shared in his honors; and throughout the Spanish War had felt great pride in his achievements. He had seen that the medical department was not second best, but first best, notwithstanding all the drawbacks; the results were more satisfactory and the criticism less than in any other department of the service, and Dr. Sternberg then and there demonstrated that a medical man might have executive ability outside his own lines.

Colonel Lippincott spoke of himself as being a frontier man, at the present time being stationed at Governor's Island and feeling even more in the backwoods than ever. He said that the army, and his own corps all gravitate toward General Sternberg; their respect and love reach out in his direction. At the present time there is an army of 66,000 men, which before had numbered more than 100,000 men. But so far as the Medical Department was concerned five corps were ready for active campaign service. The work that Dr. Sternberg had done, finding ten years ago the miserable old stuff left from the Civil War, in remodeling and reconstructing the corps so thoroughly and fundamentally, was a matter to be proud of, and one is proud to have such a medical man in the army; one honors the man who made it possible and owes him a debt of gratitude.

Speaking on the subject of the work of the "Army in Cuba," Dr. William Osler of Baltimore said that it was a happy expression, "Peace hath her victories no less renowned than war." The Spanish war, he said, afforded an illustration not of prize-fighting, but of a great big giant pomelling a puny citizen affected with general paresis or Parkinson's disease; it was not a fight, he said, it was a walkover. But there was another thing, and a totally different thing; another foe, worthy of the best of America's steel; and no chapter in the history of medicine will be able to stir the blood of the American profession as that which will tell of the battle with that foe, yellow fever. He said it was a noble tale from the earliest history when Matthew Carey, of Philadelphia, in 1793 first took up the work. Throughout the early history of medicine one reads the work of Rush and of Carey and the host of others who fought that foe. It had always been the same story in the Gulf States, the soul-stirring history of the men who had laid down their lives in the struggle with this mighty adversary. Here was the foe that General Sternberg had fought and had vanquished; his name would go down to posterity with the honor of a battle long fought and valorously won. The victory, Dr. Osler said, was accomplished in a way that reflected great credit upon the army and upon the medical profession. The work of Reed and Carroll was a piece of work well planned and well carried out, a demonstration to the entire world.

That, however, is not all of the story. Tuberculosis, typhoid fever, these are with us still. Never has there been an instant in the history of medicine when with such rapidity an organization had been able to wipe out a scourge. That work had been carried on by Dr. Leonard Wood and Dr. Gorgas.

Dr. Gorgas said that had their work not been as successful as good fortune had made it, General Sternberg would have received the entire blame, the success was his also. When Havana was occupied in 1899, he became health officer in the spring with no very clear idea of what to do and at first he had devoted his attention to organization and development of a sanitary department; work was started in on all lines, good as well as bad, bad as well as good. There was little yellow fever in the spring of that year, but in the fall and winter there was a great deal. In 1900, though the general sanitary condition had immensely improved, the yellow fever was still present and the epidemic was of a severe character. There were over 1,400 cases and 300 deaths, and he felt discouraged at the little progress made. In 1900 Dr. Reed, Chief of the Bureau, first directed work along the lines of the theory of the mosquito infection, and he proved, as history now so well knows, that the mosquito can be infected only during the first three days of the disease, and that there is a period of from twelve to twenty-five days when the bite of the Stegomyia can convey the disease.

In February, 1901, the Sanitary Department was reorganized and turned its attention to study the local conditions and their relation to the spread and development of the mosquito. The rain-barrels, the family cisterns, all breeding the Stegomyia, the Chinese gardens from which came Anopheles, all these were studied in much detail and a large force of 150 men was put to work. There were but few cases of yellow fever at the time, and the mosquitoes of the neighborhood were killed by fumigation, pyrethrum powder proving a very efficient mosquitocide. In January of 1901 the city was free from yellow fever; in July the suburbs received a certain amount of reinfection; but on September 28, 1901, the last case of yellow fever occurred. Since that time the land has been practically free, since Havana has been the center of infection. The success had been due to the study of the mode of propagation, which discovery had been made possible by the enthusiastic coöperation of General Sternberg.

Dr. Janeway then introduced Dr. John A. Wyeth of New York, the retiring president of the American Medical Association. Dr. Wyeth in turn introduced Dr. Frank Billings, of Chicago, the recently elected president.

Dr. Billings said that he did not feel that he could add anything to what had been so well said, but that he desired to speak for the American Medical Association, the representative body of American physicians. It was a great pity, he thought, that this association does not embrace all; the reasons for this are not hard to find, however; it is in part due to the great extent of our country and the relative difficulties in transportation facilities. But these are being steadily overcome, and he hoped the time would come shortly when the entire medical body would be found standing together with all misunderstandings laid aside; that physicians would not be considering each other as doctors, but rather as men and more particularly as gentlemen who were meeting on common ground. When that day should come, and as he saw it it was very rapidly approaching, there would be no difficulty with ethics, and the new organization which had proved so successful under the guiding administrations of Dr. Wyeth and Dr. Simmons would go forward, and the higher standards of professional integrity and scientific research would advance through the broadening and uplifting influences of the American Medical Association.

Dr. W. H. Welch of Baltimore spoke of that side of the work of Dr. Sternberg which was most familiar to him, namely, his work in bacteriology. Dr. Sternberg, he said, was the pioneer worker in bacteriology in this country; he had been compelled to acquire the technic from reading, and the entire world knew how he had perfected a technic equal to that of the best. Dr. Sternberg, he said, had made many important discoveries; his work on disinfection and disinfectants would stand as a monument alone. As the first worker to isolate the micro-organism of pneumonia he had gained renown, and his work with yellow fever would stand forever.

He said that it was a common thing, in these busy days, to forget the steps which led up to any important discovery. All that Dr. Sternberg had done in the study of yellow fever was necessary work and it had to be done in just the way that he did it. The ground had first to be cleared; if it were not so the discovery had not been possible, and later discoverers themselves would have had to hunt out the large host of micro-organisms which Dr. Sternberg had described and laid aside. Dr. Welch said that his careful work had practically resulted in the view that a bacteriological origin for this disease could not be claimed, and it was on *a priori* grounds that he himself had felt that Sanarelli's bacillus was not the cause of yellow fever. His study of others' discoveries was most careful, and most critical; it was not wasted endeavor. The problem still remains, however, what the cause is, although the method of eradication has been demonstrated in a most complete and authoritative way. Dr. Welch expressed the wish that Dr. Sternberg would come back to his old love, and to his test tubes, and he welcomed him to many years of fruitful work in a field that had always claimed him as peculiarly its own and one in which honor and renown had been won at home and abroad.

THE NEW PRESIDENT OF THE AMERICAN MEDICAL ASSOCIATION.

Frank Billings, M.S., M.D., was born on a farm in Iowa County, Wisconsin, April 2, 1854. His paternal ancestors were of English decent and settled in New England in 1654. His maternal ancestors were of English decent; they settled in Virginia and migrated with Boone to Kentucky.

Dr. Billings was educated in the common schools of Wisconsin, the State Normal School at Platteville, Wis., and in the Northwestern University. He was graduated from the Chicago Medical College in 1881. He was interne at Cook County Hospital, Chicago, 1881-2; demonstrator of anatomy, Chicago Medical College, 1882-4; student in Vienna, Austria, Berlin, and Paris, 1885-6; lecturer on physical diagnosis, Chicago Medical College, 1887-90; professor of principles and practice of medicine, Chicago Medical College, 1890-98; president of the Chicago Medical Society, 1891; chairman of the Medical Section of the American Medical Association, 1899; professor of medicine and Dean of Faculty, Rush Medical College (in affiliation with the University of Chicago) 1898; Shattuck lecturer, Massachusetts Medical Society, Boston, June 10, 1902; orator in medicine, American Medical Association, Saratoga, 1902. At present he is attending physician to the Presbyterian, St. Luke's and Cook County Hospitals; president of Board of Trustees and attending physician to the Memorial (McCormick) Institute for Infectious Diseases; consulting physician to Michael Rees, Provident, Passavant, and other hospitals of Chicago.

Frank Billings, M.S., M.D.

Dr. Billings is known as a man of careful painstaking inquiry. Catholic in spirit and in his sympathies; an interesting and genial teacher, and one who has built up a school of scientists in Chicago who are an honor to the profession, such are some of the attributes of the new President.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Fifty-third Annual Session, Held at Saratoga Springs, June 10, 11, 12, 13, 1902.

SECTION ON PRACTICE OF MEDICINE.

FIRST DAY—JUNE 10TH.

(Continued from p. 1163.)

Graves' Disease and Glycosuria.—Dr. Heinrich Stern of New York described some experimental work and clinical observations on the association between exophthalmic goiter and true and transitory glycosuria. Into the stomachs of a series of patients suffering from distinct symptoms of Graves' disease 75 grams of pure glucose were introduced. In only one of the cases did sugar appear in the urine. Then only 3½ grams were excreted, a transitory alimentary glycosuria probably not more in amount than would be found in many individuals. Of the other 7 patients experimented with not one showed any trace of glycosuria. This proportion, one in eight, is not more than would be found in the same number of patients suffering from chronic gastro-intestinal disturbance; for in many such patients alimentary glycosuria occurs frequently. There are other affections in which some form of glycosuria is much more frequent. For instance in traumatic neuroses 20 per cent. of the patients suffer from it.

Dr. Stern has seen spontaneous glycosuria occur in a case of Graves' disease, but he is inclined to suspect that the presence of true diabetes with Graves' disease is a not impossible combination. He does not think, however, that the association of the two sets of symptoms is always accidental. The occurrence is too common to be merely a coincidence. Both affections may perhaps be considered neuroses, due to some affection of the sympathetic or of the medulla or perhaps of the thyroid gland. The rule is that Graves' disease exists for a long time before the development of the diabetic glycosuria. The combination of affections is practically always fatal. Periods of improvement occur, but they do not last long. At times Graves' disease is latent and gives so few symptoms that it must be looked for carefully. The thyroid causation of the diabetes as well as of Graves' disease seems improbable since Minkowsky has called attention to the fact that extirpation of the thyroid does not cause glycosuria. The cause might be some perverted action of the thyroid setting loose in the circulation some ferment that disturbs the sugar metabolism of the system.

Females Mainly Affected.—Besides two cases observed by himself, Dr. Stern has collected from the literature twenty-two other cases. Of the 24 patients only 2 were males. Graves' disease occurs much more frequently in women than in men, but not in any such proportion as this. Only about four times as many women suffer from the disease as men. The ages at which the affection occurs is from eighteen to fifty-nine years. The average age is about thirty-nine years. Many of these cases occur during the menopause.

Treatment of Combined Diseases.—Dr. Wells of Chicago, in discussing the paper, said that codeine does good for both symptoms-complex, and seems to be the drug to employ. It should be used freely if its effects are to be obtained.

Dr. Allen Jones of Buffalo reported a case in which glycosuria made its appearance after the use of thyroid extract given for the reduction of obesity. This glycosuria has continued ever since except when the patient is on an absolute diabetic diet.

In closing the discussion, Dr. Stern said that glycosuria occurring after the use of thyroid extract is of the type of alimentary glycosuria.

SECOND DAY—JUNE 11TH.

Etiology of Chronic Nephritis.—Dr. A. R. Elliott of Chicago said that chronic nephritis is much less rarely related etiologically to acute nephritis than has been imagined. Even when there is acute nephritis in the history it is important to ask if any nephritic symptoms have been present before the acute inflammation became manifest. Not infrequently acute exacerbations of symptoms occur during the course of a slow-running chronic nephritis and simulate acute kidney trouble. Frequently it will be found that the patient's health before an attack of so-called acute nephritis was not good and has suspicious indications of kidney failure. Arteriocapillary fibrosis—Gull and Sutton's disease—does not enter as much into the causation of chronic nephritis as has been thought.

In Dr. Elliott's opinion the absorption of toxic substances from the intestinal tract plays the most important rôle in the etiology of chronic nephritis. The importance of this is very practically acknowledged by the range of dietetic treatment for the affection. The morning purge, colonic irrigation, and excitation of the intestinal functions generally, lead to prompt amelioration of the nephritic symptoms. On the other hand serious nephritic conditions are ushered in by intestinal accidents. The first symptoms of uremia or of kidney insufficiency are usually noted in the gastro-intestinal tract. The coated tongue, the nausea, the pain in the back, the oxaluria, etc., are all common symptoms of nephritis and intestinal disturbance. After the kidney function is lowered the liver cells degenerate because of the presence of toxic substance, the liver then fails to metabolize substances that come to it and adds its own quota of toxic material to the blood, which still further irritates the kidney. The vicious circle of influence thus formed continually deteriorates the general condition.

Sedentary Life and Hypernutrition.—The inactive life of many city people is undoubtedly a cause for the development of toxic systemic products that irritate the kidneys. Almost inevitably such people overeat and this adds to the manufacture of toxins. In these patients the urine is often quite toxic when injected into animals. The basis of these metabolic disturbances is often an atonic intestinal catarrh. This condition, however, is perhaps itself a manifestation of uremic conditions. Constipation is a very uncertain effect. Though long-continued in some people, it fails to produce any serious systemic effect, while in others its existence for a comparatively short time produces many and even serious symptoms. Coprostasis provides in the material detained in the intestinal tract a very favorable culture-medium for microbes. These not only produce poisons themselves, which are absorbed with serious effects, but they also consume normal food material in the intestines and leave only degradation products to be taken up for the body nutrition. These factors are especially active in the production of chronic nephritis and the realization of this furnishes the best indications for treatment.

Malarial Nephritis.—Dr. Wm. Britt Burns of Memphis, Tenn., described a case of malarial nephritis in which the kidney changes were undoubtedly due to the malarial poison alone. Other organs were also affected by the malarial poison. This case fills up certain lacunæ in Ewing's case in which the malarial parasites were demonstrated in the kidney tissues. The other organs were thrown away in that case and so the characteristic changes of malaria confirmatory of the indications found in the kidneys were not observed. Dr. Burns considers that his case shows beyond all doubt that malaria is a prominent factor in the causation of kidney disease in malarial regions.

Classification of Chronic Nephritis.—Dr. James B. Herrick of Chicago said that no successful classification of chronic nephritis has ever been made. In 1827 Bright did his classic work, letting in the light on the obscurities of kidney disease, but forty years later Rindfleisch declared that the kidneys had attracted the most pathological attention, yet had given least satisfaction. It is now conceded that kidney congestion is not Bright's disease. This suggestion is due to Traube. He and Virchow and Rokitansky also ruled out amyloid degeneration of the kidney from the list of Bright's disease. There remain, however, a series of nephritic affections extremely hard to group and without intermediate members that evoke any hard and fast classification.

Two Chief Groups.—There are two main groups of kidney trouble with clinical symptoms distinct and characteristic pathological changes. The extremes of these two groups are readily differentiated. Chronic parenchymatous nephritis gives readily recognizable symptoms of edema, albuminuria and cylindruria and at autopsy the large, soft, white kidney is found. In chronic interstitial nephritis the urine is abundant, of low specific gravity, with few casts, and at autopsy the small, contracted, or so-called gouty kidney is found. There are, however, combinations of these two pathological processes that evade classification under one or other head. The words parenchymatous and interstitial are always misnomers, as both the secreting substance and the supporting structure of the kidney are affected to some extent at least in both forms. Senator of Berlin, the disciple of Traube and the great German authority on kidney disease, suggested the name chronic diffuse nephritis with or without induration. The pathologist refuses, however, at times to follow even this simple classification. Dr. Herrick says that he has seen Prof. Chiari of Prague more than once refuse to say what form of nephritis he recognized in a kidney at autopsy and state in the report simply chronic Bright's disease, without further qualification.

Intermediate Form of Nephritis.—Dr. Herrick is of the opinion that an intermediate form of nephritis should be acknowledged. Its symptoms develop when the transformation from parenchymatous to interstitial nephritis is taking place. Sometimes this occurs because the parenchyma of the kidney, having become hopelessly degenerated, gradually disappears and an overgrowth of connective tissue occurs. This may be designated by the term suggested by Riesman, secondary interstitial nephritis. Besides this there is still another form due to arteriosclerotic changes.

Diagnosis of Chronic Nephritis.—Dr. A. O. J. Kelly of Philadelphia said there were many diagnostic features of chronic nephritis, but the most important are the albuminuria and the cardiovascular changes. The discussion of extrarenal albuminuria is aside from the purpose of the paper. Functional or cyclic albuminuria must be discussed, however, because it may easily lead to error of diagnosis. Albuminuria with and without kidney changes occurs and has a very definite significance in most cases. As a rule, however, the presence of albumin alone without casts must not be taken to mean too much. It may prove the source of ready diagnostic error.

Physiological Albuminuria.—It is very generally conceded by the best clinical authorities that a true physiological albuminuria may occur. Its subjects are always young and present absolutely no other signs that would call attention to their kidneys. The albumin in the urine is usually found in the course of an examination for life insurance or some health certificate. At times the albumin is continuously present for long periods, more frequently it is intermittent. Postural albuminuria due to the maintenance of a position that favors kidney congestion or the albuminuria that occurs as the result of emotional strain belongs under this head. It is often seen in young persons during the excitement of preparation for examination. It may persist for weeks under these circumstances and then disappear without leaving a trace of damage. Diagnosis may only be made with any degree of assurance if the patient is young and if the amount of albumin is very small, not more than $^1/_{10}$ of one per cent. There must not be accompanying hypertrophy of the heart and there must not be accentuation of the second sound. Genito-urinary conditions that might prove a source of extrarenal albuminuria must be carefully excluded. There should not be serious organic disease of any kind and not more than a few casts and those hyaline in character. The retina should be carefully examined in order to be sure that no traces of retinal nephritic symptoms are present.

The Heart and Vessels.—Hypertrophy of the heart occurs in all forms of nephritis, but not in all cases. In the interstitial form of kidney disease the hypertrophy of the heart occurs early. The heart may become enlarged also in parenchymatous nephritis. The changes that take place in the blood-vessels are more complex. First they lose their elasticity. After this atheroma may develop, but this is not constant. The walls of the arteries become thickened; the inner and middle coats being especially involved in this change. The causes of the alterations in heart and arteries are not well understood as yet. Arteriosclerosis accounts for some of them. This is commoner in this country than abroad and when it occurs is responsible for the changes in the kidney as well as those in the heart. The hypertrophy of the heart is sometimes considered due to the fact that irritant substances allowed to remain in the blood by the failing kidneys cause the capillaries to contract spasmodically and this throws more work upon the motor part of the circulation. The theory of Traube, modified by Cohnheim and Tyson, is probably nearer the truth. They suppose that the heart enlarges compensatorily in order to make up for the failure of elimination through the kidney by increasing blood pressure and so aiding kidney function.

Albuminuria—When Present?—Albumin may be absent for days. It may not be present in the morning urine and yet make its appearance later in the day. It may appear only after exertion or emotion. It may be seen only after the abundant use of proteids. The cardiovascular changes may very well be the most important symptom of the kidney condition. Digitalis may furnish a therapeutic test in certain cases. The albuminuria and casts of kidney congestion will disappear after administration of digitalis. In true nephritis the casts and albumin may be lessened in number and amount, but they do not disappear. In doubtful cases the retinal changes may prove important aids. Their occurrence is always an absolute sign.

Circulation in Bright's Disease.—Dr. L. Faugères Bishop of New York city said that Bright's disease is not primarily a kidney disease, but is really a circulatory disturbance. The brain and kidneys, the end organs of the circulation, suffer most. It may well happen that death comes on from brain lesion at a time when the kidneys are yet in reasonably good condition. Dr. Bishop gave the details of a case in which, by careful dieting and avoidance of extremes of temperature or other hurtful factors, the kidneys were spared, yet the fatal issue came through the brain. The brain is a very sensitive organ and may show signs early in the case. The kidneys are insensitive and may not react until late in the progress of the arterial changes.

Early Symptoms of Bright's Disease.—The first symptoms of Bright's disease may be those of increased arterial tension. There may be, because of this, increased frequency of urination, or occasional nose bleed or persistent headache. A very early symptom may be functional gastric disturbance from increased blood pressure. These gastric symptoms must not be confounded with the nausea and vomiting of later stages of nephritis. The prenephritic condition of Bright's disease may be detected in the irregularities of the circulation. These may give rise to clumsiness in the use of limbs or to actual paresis of one or more members. There may be temporary aphasia and this symptom may recur several times, passing off completely in the interval. The earliest symptoms of Bright's disease if carefully looked for will nearly always be found in the brain.

Uremic Aphasia.—Dr. David Riesman of Philadelphia said that his attention was first called to the serious brain symptoms that came from uremia while making autopsies at Blockley Hospital. A number of cases diagnosed as apoplexy, because of hemiplegia and other forms of palsy, proved to have no lesions in the brain. The paralyses were due to uremia entirely. Dr. Riesman has recently seen several cases of uremic aphasia with and without paralytic accompaniments. The aphasia was usually of the motor form, although some traces of sensory aphasia were also noted. One patient was able to recognize, but could not recall the names of objects. She could repeat the names when given to her. When asked to sing the national anthem she could follow the air but could not give the words intelligibly. In this case there was considerable albuminuria, the urine was of low specific gravity, and there was marked polyuria. In twelve days the aphasia had passed away, except for some hesitancy of speech when the patient became excited and tried to talk fast. It is evident that the aphasia in this case was not due to hemorrhage, for it disappeared too rapidly and completely. Besides, it would have required very extensive hemorrhage to affect the centers for both speech and writing. The disturbance was not due to emboli, for it was too extensive and besides there was no known source of emboli.

Diagnosis of Uremic Aphasia.—This is made from the transitoriness of the affection and the concomitant existence of urinary symptoms. In adults the uremic aphasia may occur with any form of Bright's disease. Other factors besides the presence of toxic products in the blood of such patients may cause the symptoms. The increase in viscosity of the blood, for instance, may help to account for some of the nervous symptoms of the affection. The aphasia may continue for from one-half hour to forty-eight hours. Exceptionally it may persist for a week or even more.

Treatment of Bright's Disease.—Dr. Frank Billings of Chicago said that the first indication is to maintain the cardiovascular integrity. For this not specific drugs, but individualization of care is needed. The urinary output must be maintained and the nutrition must be kept up. Digitalis and a diuretic are not always needed. Iron should not be given unless anemia is present. The routine use of Basham's mixture, as pointed out by Tyson, is likely to do more harm than good. At times milk diet is excellent. The starvation methods of the quacks often give surprisingly good results and have attracted attention in the East and West. Overfeeding may be necessary in some cases. Beef is not a poison for nephritic patients, but should be used judiciously.

Frequency of Chronic Nephritis.—Dr. Thos. Futcher of Baltimore said that at Johns Hopkins in twelve years there had been 13,900 medical patients. Of these 590 suffered from nephritis. Only 42 of these cases had the acute form of the disease. Chronic nephritis seems to be rather the result than the cause of arterial changes. The prognosis of a case depends rather on the condition of the heart and blood-vessels than on the extent of the kidney changes, as they may be judged from the urine. The coma of uremia should be treated by injections of normal salt solution after venesection. About 500 c.c. of blood should be withdrawn, and from 1,000 to 1,200 c.c. injected. This at once occasions diuresis and gives prompt relief of the symptoms.

Glomerular Albuminuria.—Dr. N. S. Davis, Jr., of Chicago said that he has seen cases without any constitutional symptoms yet with albuminuria and some hyaline and even granular casts. In these cases scattered glomeruli throughout the kidney are affected, but enough excretory tissue is left to accomplish the work of elimination. When such cases are followed for several years, however, they develop chronic nephritis. Individual treatment is the only true method of bettering these patints. At times a milk diet or mingled milk and farinaceous materials give the best results. Albuminous materials are sometimes needed, however, and far from harming prove beneficial to the patient.

Nephritis and Oxyuris.—Dr. McKenna of Philadelphia reported a case of acute nephritis developing as the result of the invasion of the kidney by oxyuris vermicularis. Albumin appeared in the urine and notwithstanding the washing out of the bladder it continued to reappear. Just how the oxyuris gained its entrance to the kidney is not clear. Its causative relation in the case is manifest.

Pneumonia and Endocarditis.—Dr. E. F. Wells of Chicago said that endocarditis is a rare complication of pneumonia, yet it occurs and must be looked for. Usually it takes the form of simple endocarditis, but at times it may be ulcerative in character. Dr. Wells has recently had a case in which ulcerative endocarditis developed. The pneumonia ran its normal course. Labial herpes was marked. On the seventh day hematogenous jaundice developed. The patient had good stools during the course of the pneumonia, but flatus was very abundant. There was considerable kidney irritation and on the fourth day 2 per cent. of albumin was found in the urine. On the sixth day this had risen to 5 per cent. After this time the amount of albumin declined until it disappeared. The pneumonia proved very severe, affecting nearly every portion of the lungs. Resolution proceeded very rapidly and convalescence was without incident until the patient's recovery seemed assured.

On the twenty-ninth day after the beginning of the illness the patient while sitting up in the afternoon was taken with extreme weakness. He was at once put to bed and slept. After this his shoulder was swollen and tender. He became restless and during the next few days a series of symptoms developed affecting most noticeably the nervous system and the special senses. There was some photophobia, some disturbance of hearing, and some hesitancy in speech. Later embolic symptoms developed. Red spots appeared on many parts of the cutaneous surface and these gradually changed to purplish in color. All the joints became sore, tender and swollen. The fingers were especially involved in this process. After several days an aortic diastolic murmur became audible.

Convalescence and Ultimate Result.—The patient was kept absolutely at rest and despite the severity of the symptoms began to improve. The arthritic symptoms were especially slow to disappear. The profound prostration so marked a characteristic of the disease did not disappear completely for over three months.

The fingers were not entirely well for eighteen months after the illness. A few hyaline and even a granular cast or two could be found after two years. The prognosis of ulcerative endocarditis, due to the pneumococcus, is not so absolutely fatal as for other forms of the disease, but it is evident that the hope extended to the patient must include the warning as to very slow convalescence.

Treatment of Ulcerative Endocarditis.—The principal element of the treatment of the affection must be insistence on the suppression of all voluntary movements. This must be continued for many weeks. There is not in pneumococcus endocarditis the tendency so often observed in rheumatic endocarditis of causing subsequent cicatricial contraction of the affected areas. The vegetations occur by preference on the aortic valves. They are usually large in amount and easily break down into the so-called ulcerative variety with the shower of emboli that is characteristic of the process. For the avoidance of this and the prevention of its continuance absolute rest is the indication. The restorative process is extremely slow and there must not be any attempt to hasten it or serious results in the heart muscle or valves may supervene.

Forms of Endocarditis.—Dr. James B. Herrick of Chicago said in discussion that he is particularly interested in the possibility of recovery from ulcerative endocarditis. Occasional recovery may be expected in this form of septicemia as in other forms. Many careful clinical records, such as the one reported by Dr. Wells, bear out this statement, and postmortem examination at times showed that death was due to the mechanical effect of the valvular lesion, the organism, usually the streptococcus or the pneumococcus, being degenerate and dead and the valves scarred and healing. Cases due to the staphylococcus were more malignant. The work of Harbitz was referred to and the importance of bacteriological examination of the blood as an aid to prognosis and treatment was emphasized.

Recovery Complete.—In closing the discussion Dr. Wells said that if recovery occurs in pneumococcus endocarditis, it is apt to be complete. The prognosis quoad vitam is more serious than for rheumatic endocarditis, but the danger once over the liability of serious crippling of the heart is much less.

(To be continued.)

SECTION ON SURGERY AND ANATOMY.

(Continued from page 1161.)

Third Day—June 12th.

Obstruction of the Bowels by Meckel's Diverticulum.—Dr. James E. Moore of Minneapolis thought that in some very rare cases the diagnosis could be made, tentatively, on the curious fact that the symptoms come and go in the most astounding way. He said that the diverticulum was too often mistaken for the appendix and that it is a more frequent source (2 per cent.) of obstruction than is usually supposed. In operating care should be taken not to cut the omphalo-mesenteric vessels which are very often patent and run in the very bands which cause the obstruction.

Calculus Nephritis and Urethritis.—Dr. C. L. Leonard of Philadelphia said that it was the small rather than the large calculi which were to be feared. They often remained in the urinary system quiescent, save for very slow growth, for years, and were frequently mistaken for chronic Bright's. As a rule the larger the calculus the less marked the symptoms. To illustrate that a crying need existed of establishing suitable diagnostic methods for this condition he spoke of cases in which, because of erroneous diagnosis, good kidneys had been converted into death-dealing pus-sacs by the hydronephrosis produced by a small stone. Calculi vary widely in the time taken to traverse the ureter, it may be a matter of hours or months and the ray had enabled us to note symptoms which were characteristic of certain positions for the stone. As a rule, the urine furnishes but little that is of value in the diagnosis, it is either normal or indicative of chronic nephritis. Stones do not by any means always arise in alkaline urine; they are tolerably common in urine that is bacteria-free and chemically normal. He has found an unusual percentage of his cases to have ureteral stone—fully 60 per cent. The symptoms are as protean as can well be imagined. Subjectively, chronic gastric irritation had seemed to him very constant, but blood in the urine and pus have both been much overestimated. The ray is often of the very greatest value when it places the stone where the surgeon knows there is a good chance of its being passed, thus contraindicating operation. He based his views on the extraordinary value of the ray on the gratifying results of 254 cases.

Intrapubic Section for Prostatotomy and Prostatectomy.—Dr. E. Wyllis Andrews of Chicago said that it was utterly hopeless to gain any information from the literature of the prostate because of its fearfully chaotic state. He wished to present a theoretic argument rather than a dogmatic statement of conclusions. After operating via the suprapubic and perineal routes many times, the idea had occurred to him that very possibly it was not the *size* of the prostate but the *position* which gave the trouble. He was led to this supposition by noting that many very large glands gave no symptoms whatsoever, while just as often there were patients in the direst distress because of obstruction from a small and seemingly harmless organ. He believed that this was to be explained by an unnatural shortness of the anterior ligaments. These prevent a backward and downward movement of the gland when it undergoes adenomatous degeneration. Acting on these premises he cut into the angle of the pelvis just alongside the pelvis, tore the anterior ligaments loose and divulsed enough of the anterior portion of the gland to easily feel the sound in the urethra and closed the wound without having entered the urinary apparatus. This he considered a very important advantage of his technic.

Drainage of Extravesical and Extraperitoneal Suppurations of the Male Pelvis.—Dr. Eugene Fuller of New York said that although his subject covered but a very small class of cases, their great severity and danger formed a sufficient excuse for his having chosen it. He dealt with the anatomy of the part in great detail and named the various paths by which pus might make an exit from the pelvis. Below, there is a very definite limiting plane; above this is not so and suppuration may travel unobstructed to or above the kidney. The symptoms are very obscure, save when the condition is due to known extrinsic causes, but pain is always constant and characteristic. The treatment consists simply in full and free drainage. The abdominal opening should be in the lower inguinal region, through it a suitably curved sound will easily pass over the bladder into the pus sac and upon it a counter opening may be made in perineum or thigh. If both lateral chambers of the pelvis be involved, several tubes may be necessary.

External Urethrotomy from the Standpoint of the General Surgeon.—Dr. John C. Munro of Boston said that in a recent experience with fifty cases he had found that the stricture must be one of extreme tortuosity to remain impassible to one of half a dozen filiforms passed in a bunch to its seat and manipulated with care, skill and patience. He would introduce no sound for the first three days, then not oftener than every third day; it was less painful and just as satisfactory. Extravasations of urine are complications which call for great common sense and much anatomical knowledge on the surgeon's part.

In the discussion of these papers Dr. A. T. Cabot of Boston said that the great difficulty of diagnosing stone, without some such wonderful aid as the X-ray was well-known. The ancient signs and symbols, which were formerly thought to have great weight, and even the more modern methods of segregation and ureteral catheterization were all shown to be very faulty by the ray. However, one must remember that this new help is not infallible and may lead us into gross error. Particularly is this true in attempting to establish negative diagnoses. The greatest danger of the ray failing exists in those cases in which the stone has passed into the pelvis, the heavy shadow of the bone effectually shutting off the lighter shades of the calculus. In these cases the point of tenderness is a valuable sign and the body may often be palpated by the finger in the vagina. Dr. Ernesto Blasucci of New York said that he desired to show a small instrument for bladder drainage. The so-called siphon instruments do not act as siphons at all and are apt to be unreliable.

Dr. Ochsner of Chicago said that full discussion of the means at hand to avoid or to control hemorrhage in prostatectomy was much to be hoped for. He had found that as soon as the organ is well exposed in the perineal wound two diverging cuts through its capsule suffice for digital enucleation of the organ and the hemorrhage from them yields easily to pressure.

Dr. Moore of Minneapolis thought the members should thank Dr. Andrews for his suggestions as to the part played by the puboprostatic ligaments. Theoretically, his route is certainly the best of the three, but it did not yet seem to him as practical at the perineal. One great advantage it possessed was the fact of its leaving patent and undisturbed the seminal vesicles and ducts.

Dr. Bullitt of Louisville endorsed the great value of Dr. Fuller's paper. Such cases occur but seldom, but when they come the surgeon should be prepared.

Dr. Murphy of Chicago said that the enlarged prostate may have passing through it a urethra of large size—frequently an inch in diameter. The mucous membrane of such a tube would dip down as far as the skin, through the perineal wound and, making fast there, would establish a permanent fistula. This accounted for these disagreeable post-operative sequelæ. He therefore dissects out the posterior wall of the prostatic urethra. Dr. Ochsner had shown very clearly that the isthmus of the prostate must be avoided till the very last; this is the secret of having no hemorrhage. He was sure that the so-called mid-lobe was not a part of the prostate at all, enjoined the perineal route and urged that drainage is all important.

Dr. Ferguson of Chicago had given up the suprapubic route. Those patients who suffer subsequent to operation with incontinence do so because of the bladder sphincter having been cut.

Dr. Young of Baltimore said that although the X-ray was of very great value in diagnosing urinary calculi, he had found the cystoscope of almost equal worth. Once one has got a good look at the mucous membrane of the urinary papilla, much more could be judged from its condition than from the mere presence of pus, blood, or other foreign matters. He had done prostatectomy by all the methods and considered the operation of the very highest worth. It will be some time, however, ere the profession at large and the laity are educated to the early operation which is necessary for the success of this procedure. It seemed strange to him that no one had spoken of the Bottini operation, which in these very old cases seemed to fill a great gap. He knew that it was not surgical, but he also was well aware that it saved life, and if properly performed, with instruments specially suited to each case, would afford permanent relief. He had recently done 55 of these much-abused operations with three deaths, 19 of the patients having been over seventy. Prostatectomy was ideal, but in very bad cases prostatotomy was the safer operation.

Dr. Parker Syms of New York said that when he first began this sort of work all prostates were taken out by abdominal section. He had become convinced that the perineal route would be more favorable and had so demonstrated. He was glad to see the signs all pointing now to the abandonment of the abdominal path. For Bottini's operation he could say nothing favorable and soon expected to do prostatectomy on a patient upon whom a competent surgeon had done the former operation no less than four times. He spoke of his collapsable rubber bag for introduction into the bladder as a means of drawing the prostate down. He reported twenty cases, without a death, in each of which there was a perfect result.

Dr. Leonard in closing said that the X-ray had failed to establish a negative diagnosis in 254 cases in 2 per cent. This record established it as the most accurate diagnostic method at hand.

Dr. Andrews said that he saw all sorts of technical difficulties in the way of executing his operation, but in the three patients upon whom he had tried it they had not been insurmountable and in each an admirable result had been obtained. He urged that the effort should be to sever rather than to avoid the urogenital floor, so that the freed prostate might fall back and be out of the way.

Dr. Fuller was happy to witness the *coup de grace* to Bottini's worthless makeshift. He would not call it an operation. It had slumbered for twenty years; its revival had lasted two or three; everyone should hope that it was now set aside for good. It might be that he would in time advocate the perineal route; he had always used the upper path, but he was not hidebound on anything save on getting the prostate out.

Essentials in the Construction of Hospitals for Great Cities.—Dr. A. J. Ochsner of Chicago said that to the thoughtful surgeon it seemed very strange that one should, in this period of enlightenment, be using the hospital construction devised by Billings twenty-five years ago. When the Johns Hopkins Hospital was so ably planned, no man knew the cause of the advantages which arise from certain types of segregation. The community had indeed but just awakened to the fact. However, everything is now clear to us for it is known that the principles of asepsis lie at the root of all successful hospital management and erection. There is a great difference between the building of a hospital in a dense city like Chicago and in a comparatively large town. In the one case there are very definite reasons why the superimposition of the wards is indicated. The pavilion system with its many advantages is distinctly not applicable to this class. On the other hand, when there is plenty of land available, when the air is not fouled by gross and microscopical floating matter, when the heat near the earth is not intense, the spreading form of construction is the ideal one. That architects have at last been able to make positively fireproof buildings is fortunate, because without them, the narrow, tall type of hospital would be impossible. He had given a great deal of attention to the building of two hospitals in Chicago, one of which had been perfected some years ago, the other, the Augustana Hospital, being not yet quite finished. He would place the operating-rooms and the kitchens in the garret. The buildings should have their long axis in the north and south direction, so that every room may have a morning or an afternoon sunbath.

Anatomy for the Practitioner.—Dr. C. M. Jackson of Columbia spoke of the very great importance of the home study of anatomy. Wondering in how many States this was practicable he had written to the Secretaries of all the States and Territories and had found that according to their laws they can be classified under three general heads: (1) Those States having no statutes whatsoever governing dissection; (2) those in which dissection is legal in medical schools only; (3) those in which practitioners are entitled to all material not wanted by the schools. There are about an even number of States in each class at present, but he urged that statutes of the tenor of the third type should be adopted uniformly throughout the country. In preserving an entire body he had found that the slow introduction of about six quarts of phenol, alcohol and glycerin formed an admirable mixture. For preparing bodies for section he first injects 50 per cent. formalin and decalcifies in 5 per cent. hydrochloric acid for three weeks. The bodies of adults can thus be sectioned in any direction without a saw. For the preservation of individual parts he would use 5 per cent. formalin, but this decolorizes. He suggested that the various county medical associations of the country each appoints an active young member to be curator of a modern pathological and anatomical museum where the members could work and study. This should not be a curiosity-shop, but an exponent of anatomy and pathology.

Anatomical Treatment of Fracture of the Femoral Neck.—Dr. C. E. Ruth of Keokuk first described his method which he had learned from Maxwell. He places an ordinary Buck's extension on the member; then, after carefully padding the inner aspect of the thigh with sized felt, he casts a sling about it just below the crotch and makes traction 40° forward and 10° outward. This is accomplished by a ten-pound weight and lies about in the axis of the neck. Out of forty cases so treated no shortening had occurred in sixteen; one-half inch in eleven; nine had been over eighty and of these none had died and six had been restored to good function.

Treatment of Fractures of Neck of Femur.—Dr. C. E. Thomson of Scranton reported seven cases in which skiagraphs and postmortem specimens showed absolute bony union. He said that old people should not be left in bed to die of bedsores or pneumonia; they should be operated on after the fracture had refused to heal under good conservative treatment. He cut down upon the great trochanter, makes a bone-flap of it and drives a silver nail through the neck to the head. A second smaller nail holds the flap back in place. He then puts on a spica plaster for three months, as Buck's dressing does not give suitable support.

Treatment of Fractured Patella by Subcutaneous Purse-string Suture.—Dr. J. B. Roberts of Philadelphia would first extend the knee and flex the hip, and keep the part cold for ten days prior to operation. He then passes his suture around the patella without entering the joint; puts in plaster for six days; keeps the patient on crutches for a month, and then dispenses with all treatment. His results were very good.

Dr. Leavings of Milwaukee recommended a free incision for these cases five days after the accident. He said that an extraordinary quantity of blood was poured out into the joint and that it should be washed away.

Dr. Beck of New York thought that so simple a suture, placed in the more-or-less elastic soft parts would give so as to be of but little value. He thought such a method as Stimson had devised more practical.

Acquired Non-malignant Stricture of the Rectum.—Dr. W. Duff Bullard of New York spoke of the causes, symptoms and treatment of this condition. A long study had convinced him that syphilis was not the great etiological factor generally supposed. Stricture was due to repeated traumata of the rectum rather than to syphilitic vascular degenerations. This is supported by the fact that such strictures never yield to antisyphilitic treatment, and by the fact that they are far more common in women. This, not because syphilitis, or even its primary lesion is more frequent in that sex, but because of the infinite traumata to which the female rectum is subjected.

Dr. Means of Columbus said that in cutting the external sphincter the incision should be made obliquely as in tenotomies.

The Surgery of Ricketts.—Dr. Henry Ling Taylor of New York said that 15 per cent. of all orthopedic cases are due to this disease. The poorer classes of the great cities are typically those who suffer; it is, therefore, evidently a disorder of nutrition. Differential diagnosis between the rachitic spine and that of tuberculosis has occasionally to be made, but should give no trouble. The treatment of old rachitic deformities is accomplished by osteosclerosis or osteotomy—the latter operation being preferred in New York.

Two Successful Operations for Brain Tumor.—Dr. Joseph Ransohoff of Cincinnati said that he wished to emphasize two points which had been neglected or wrongfully interpreted. The first was that there is no reason why operation should be contraindicated in solitary tubercles of the brain; the second, that cerebral operations should be based on the *early* rather than upon the late symptoms.

Fractures of the Lower End of the Radius.—Dr. Carl Beck of New York showed a series of instructive lantern-slides of skiagraphs of this class of fractures. He said that they had taught him one thing, *viz.*, that one cannot properly adjust any fracture without the help of the ray. The old-fashioned and classic positions were used on the supposition that all breaks of the lower radius were about alike. One now knows that they are about as unlike as anything well can be. No surgeon can afford not to look at the extremity with the ray after the primary reduction and dressing.

Fourth Day—June 13th.

Traumatic Rupture of the Abdominal Viscera Without External Signs of Injury.—Dr. D. N. Eisendrath of Chicago said that the object of the papers was to call attention of the profession to a general lack of knowledge of this class of injuries and the necessity in future of earlier diagnosis and intervention. This is true because it is more frequent than gunshot and stab-wounds of the abdomen together. Ruptures of the kidney and intestine form 6 per cent. of injuries; next in frequency come liver and spleen. Surgical anatomy shows the majority of viscera, especially kidney and intestine to be poorly protected, the spleen is very movable, the liver quite fixed. The pancreas and stomach are well protected. The mechanism of injury has much to do with which organ is injured. Hence it becomes necessary to inquire exactly into the nature of accident. Force acts either directly or indirectly. If the former, either over a large area (more likely to rupture parenchymatous organs) or over a circumscribed (intestine or bladder). If by falls on feet, buttocks or head (indirect force) it is more apt to affect liver and kidney. It may rupture by tearing; bursting or direct crushing probably the most frequent.

Pathology must be clear before operation is thought of. In solid viscera, subcapsular tears are rare; most frequent are lacerations involving capsule and varying in depth from shallow to deep ones traversing entire organ and even pulpifying it. In hollow viscera simple contusion of one or more coats leading later to perforation (traumatic appendicitic) or immediate rupture of all coats are characteristic. Small tears may heal, large ones may stop temporarily (report of case) or may lead to death from anemia. Ruptures of small intestine most frequent in alimentary canal, especially ileum.

Symptoms and Diagnosis.—He said that these were at times very deceptive. In general one can make the diagnosis between simple contusion and genuine injury in the early hours by considering the general and local symptoms. The former are those of shock and anemia; the latter are divided for convenience into those of the alimentary canal, genito-urinary system, and those in which hemorrhage (internal) symptoms predominate. Detailed consideration of all of these shows that one can make a fairly accurate diagnosis early. Chances of spontaneous recovery are only slight and vary according to the viscus injured. Less (7 per cent.) in intestine than in kidney (30 per cent.). He read a very detailed report and comparison of statistics for spontaneous and post-operative recoveries before and since 1896. Beginning with the latter date the percentage of recovery is much greater because of earlier diagnosis and intervention. Laparotomy in vain is better than death.

A Study of the Relative Merit of the Various Methods of Intestinal Anastomosis.—Dr. R. C. Coffey of Portland, Ore., had experimented with many methods on over 600 cadavers and on twenty living pigs. The intestines of swine resemble those of man much more closely than do those of any other known animal. He concluded that the Murphy button was the most rapid method, the Maunsell the slowest. The continuous suture which had been used in the Connell method was found in the gut lumen on several occasions two and one-half months after operation. This method, however proved very difficult of execution; Halsted's the most accurate. The O'Hara forceps and, indeed, all similar aids to the surgeon, were rejected as being first unsurgical and never on hand when needed. The crushable button method, a modification of which he presented, had yielded the best general results and seemed the most practical of all. He would make a cone out of potato or any kindred vegetable and, slipping each end of the gut over it to its middle, he transfixes gut and button with two long pins, which, in an emergency, may be toothpicks or almost anything else, at right angles to each other. The ends of the cutgut overlap and are inverted. So very simple was this method that he had seen it successfully performed by old practitioners and first-year medical students. His great objection to the Connell method, and, indeed, to all others, was that no one not doing gut surgery more or less continuously could possibly remember it, and would thus be at a los in an emergency. It was almost impossible to understand them from the intricate cuts and descriptions.

Dr. Connell of Leadville in opening the discussion said that he realized that the continuous suture was prone to remain as a foreign body. He had advocated leaving the last knot within the lumen to avoid leakage. He felt it important that all the coats be included in the sutures and that two layers of sutures made the operation just twice as long and seemed to him to increase the liability to gangrene.

Dr. Martin Tinker of Baltimore said that at Johns Hopkins frequent use was made of Halsted's bag in those cases in which the gut was dilated below and contracted above the suture line.

Dr. J. B. Bulitt of Louisville very cordially agreed with Dr. Eisendrath that in the event of rupture of any abdominal viscus immediate operation was the only surgical procedure.

Dr. Munro of Boston believed that Dr. Connell was wrong in thinking a through and through suture necessary for safe intestinal suturing. The secret of the whole thing was to avoid abdominal distention.

One Thousand Personally-conducted Cases of Ethyl Chloride Narcosis.—Dr. M. W. Ware of New York had had a very high percentage of success with this type of anesthesia. The pulse and respiration were but slightly altered by the drug and the patient's color was almost uniformly good. He had had no trouble with the collection of hoarfrost, which had proved so annoying to some. In twelve thousand cases there had been but one death and the necropsy showed that the organs of this patient were in advanced stages of disease. Nitrous oxide had proved itself by all odds the safest of all anesthetics, its death-rate being about two in a million. Six of Ware's cases had collapsed, but recovery under artificial respiration was uneventful. The after-results of narcosis had not been disagreeable. In a very few instances there had been vomiting and twitching, but neither of these amounted to anything. There was no increase of arterial tension at any time. Although long operations tended to make the narcosis very expensive, he had on one occasion given the drug for fifty minutes. He exhibited two cones which he had devised and found very practical.

Medullary Narcosis.—Dr. A. W. Morton of San Francisco had performed spinal injection six hundred times. In sixty cases the operation had been supradiaphragmatic and four of these had been resections of the tongue. The patients had varied in age from eight to eighty. On one occasion only had it been found necessary to use general anesthesia; not because of failure to anesthetize, but on account of desperate nervousness on the patient's part. He could in all justice report that his one thousand cases had been without mortality, for the one which died was moribund at the time of operation. The amount necessary for narcosis averaged from three to four-tenths of a grain for a powerful adult. The author had found a glass syringe very useful. Prior to injecting it, the cocaine should be sterilized at 300° F. for fifteen minutes. It could then be kept in sterile bottles until used. It should be placed in the partly-filled syringe and allowed to dissolve in the withdrawn cerebrospinal fluid. It was essential for the establishment of rapid anesthesia that the injection be made very rapidly. The period lasted from one to five hours and but little general disturbance had been noted in any of the cases.

Election of Officers.—At the executive session, Dr. James E. Moore, Minneapolis, was elected chairman and Dr. John C. Munro, Boston, secretary for the coming year.

SECTION ON PEDIATRICS.

First Day—June 10, 1902.

Dr. H. M. McClannahan of Omaha, in the Chairman's address, suggested the appointment of a committtee on necrology and also a committee on the general investigation of the subjects relating to the disease of children. His address reviewed quite thoroughly the current pediatric literature for the year. During the year 477 papers have been written on this subject. He emphasized the fact that the wonderful advances made in the subject of the diseases of children have been accomplished almost entirely by the physicians of this country.

Tuberculous Peritonitis.—Dr. T. M. Rotch of Boston said a clinical differentiation of cases based solely on the pathological findings is inadequate for a satisfactory decision, both as to diagnosis and as to etiology and treatment. The reason why in cases of tuberculous peritonitis laparotomy has proved to be curative is not definitely known. Tuberculosis of the peritoneum may be a primary infection, most commonly, however, it is secondary. Three forms may be spoken of from a pathological standpoint: First, a miliary tuberculosis with ascites; second, a fibrous form, and this form is essentially chronic, and third, a later stage of the form just described in which there occurs tuberculous deposits with caseation and softening. This has been called the ulcerative form. Five salient questions require consideration: (1) The diagnosis of the presence of tuberculous peritonitis; (2) the detection of which pathological form is present; (3) whether the tuberculosis of the peritoneum is localized or is secondary to tuberculosis elsewhere; (4) which of these forms is amenable to treatment and (5) under what circumstances laparotomy should be performed. The symptoms of tuberculosis of the peritoneum in infancy and in early childhood are unsatisfactory and obscure. The tuberculin reaction is therefore of value when such reaction can be obtained, although negative evidence is not decisive. When there is a localized tuberculous process in the peritoneum which is chronic in its course such patients should be treated by laparotomy. The most favorable of these cases for treatment by laparotomy is the fibrous form. In the so-called ulcerative tuberculosis of the peritoneum, tuberculous deposits are usually found elsewhere than in the peritoneal cavity. These cases as a rule cannot be benefited by laparotomy.

Tuberculin in Diagnosis.—Dr. J. M. Dodson of Chicago emphasized the great value of tuberculin as a diagnostic measure, and called attention to the X-ray which had been used in a number of cases as a remedial agent. While the X-ray has been used with gratifying results in many cases, the number is not sufficiently large as yet to speak with certainty as to its positive value.

Cerebrospinal Fever.—Dr. J. P. Crozier Griffith of Philadelphia said that this is a disease which is prone to vary, especially toward certain types. This variation, on account of the often obscure symptoms, in many instances renders the diagnosis difficult or impossible. Some are of the fulminant type, while others are so mild that the child seems scarcely ill. In some of the patients the effect of the germ appears to be localized more upon other regions of the body than upon the brain and spinal cord. Three family epidemics were reported in detail illustrating this tendency to variation.

Dr. I. A. Abt of Chiacgo called attention to the relation of cerebrospinal fever to deaf mutism and said that observations had been made showing a greater increase of deaf mutism after severe epidemics of cerebrospinal meningitis.

Diagnostic Difficulties.—Dr. T. M. Rotch of Boston spoke of the great difficulty in making a diagnosis oftentimes in the earlier periods of life. Marked symptoms of either cerebral or spinal nature are absent in many cases. There may occur cases without signs of rigidity and without opisthotonus. A lumbar puncture is exceedingly important for diagnosis, but in order to be of value, it must be made in the first few days of the disease. If this procedure be delayed the conditions may have so changed that it loses its value. The Widal reaction, as in one of Dr. Griffith's patients, may show the presence of an accompanying typhoid fever or may indicate that the child had typhoid fever in the past. It is exceedingly important to make the diagnosis in cases occurring in private practice. The prognosis in chronic cases is bad, and the disease may leave the child mentally and physically imperfect. The child indeed may become idiotic. The disease sometimes abates, but while cerebrospinal meningitis is always a dangerous disease, there is always some hope of complete recovery.

Typhoid Fever in Infancy.—Dr. E. F. Brush of Mt. Vernon, N. Y., presented an interesting case of typhoid fever in an infant. Dr. A. C. Cotton of Chicago, dissented from the statement that children were exempt from typhoid fever because they did not drink water. Even the child *in utero* may develop typhoid fever, and the nursing child oftentimes acquires this disease.

Serumtherapy.—Dr. Edwin Rosenthal of Philadelphia presented a paper in which he reviewed the general status of the serums used in the treatment of disease.

Dr. A. C. Cotton of Chicago said that his experience with antitetanic serum had proved to be unsatisfactory. There are many patients who will recover without treatment, and it is doubtful whether the serum has any effect. Croupous pneumonia does not have that formidable aspect to him as it has to most physicians. With good hygiene most patients recover with very little medication; hence serum treatment yields clinical evidence of very little value, and in catarrhal pneumonia, with its many uncertainties, he thinks serum treatment of very little value.

SECOND DAY—JUNE 11TH.

Acute Gastro-Enteritis of Infants.—Dr. Margaret Taylor Shutt of Springfield, Ill., said that the heat of summer plays an important part by depressing the child's vitality and increasing the thirst, thereby causing overfeeding and the more easy production of fermentation in the food products during hot weather than at other times. Perhaps the greatest cause of summer complaint in children is improper feeding, or overfeeding, and the artificial feeding of materials which are not suited to the child's condition. Fever, prostration, vomiting, frequent and abnormal stools make up the clinical picture, and the diagnosis can only be mistaken in the beginning for the onset of some one of the exanthematous diseases. The prognosis depends first on the child's vitality, and second on whether it receives intelligent care and treatment, the greatest problem being whether directions with regard to proper feeding and hygiene will be intelligently carried out by the mother. The most important points in the treatment are to keep the child cool and clean, and to give a limited quantity of the proper sort of food. During the attacks absolutely all milk food should be stopped, the whole alimentary tract thoroughly cleaned out, fever reduced by sponging the body and irrigating the colon. The most explicit directions as to the proper kind and quantity of food after the attacks must be given and tonic treatment when it is indicated.

Milk Idiosyncrasies in Children.—Dr. Louis Fischer of New York said that by this term is meant those cases that will not digest milk at all. They are poisoned by the slightest amount of it given in any form, and seem to have an idiosyncrasy against milk almost analogous to a drug idiosyncrasy. Many individual peculiarities are noted. There seem to be a constant irritability of the digestive tract and an absence of normal assimulative power accompanied with intestinal indigestion of milk, cheesy curds in the stools, vomiting, nausea and frequently colic. The dietetic treatment is the most important, but what food should be given in the interim until the acute symptoms subside is sometimes a troublesome problem. Breast milk is just as incompatible and just as frequently so as cow's milk. The author reports excellent results in a series of cases from the use of a malt soup, the formula of which is as follows: Take of wheat flour 50.0

(about 2 ounces). To this add 11 ounces of milk. Soak the wheat flour thoroughly and rub it through a sieve or strainer. Put into a second dish 20 ounces of water to which add 3 ounces of malt extract; dissolve the above at a temperature of about 120° F., and then add 10 cubic centimeters of 11-per-cent. potassium carbonate solution. Finally mix all of these ingredients and boil. This gives a food containing albuminoids 2.0 per cent., fat 1.2 per cent., carbohydrates 12.1. There are in this mixture vegetable proteids 0.9. This food was very well borne and gave no discomfort.

Improvement of Breast-Milk and Prolongation of Lactation.—Dr. Thomas S. Southworth of New York thinks that lactation is a much-neglected subject. Full chemical analyses of breast-milk are important in judging the quality of milk, but are by no means imperative. The specific gravity affords a simpler method of judging its quality. The improvement of the quality and quantity of breast-milk is not a complicated matter if begun early enough. Faulty or deficient milk on the part of the mother is often dependent upon an unsuitable diet or lack of outdoor exercise. Those cases of early failures of breast-milk, when the supply is diminished or disappears in the first week or two, may often be prevented and the milk completely restored provided the woman is properly managed. Bad nursing habits and faulty maternal diet are the chief causes of trouble later on. To insure the mother having a full supply of milk plenty of fluid should be drunk during the first week of the baby's life. Then throughout the period of lactation there are four fluids she should have, important in the order of their enumeration—first, plenty of good cow's milk. This should be taken every day, as this is the greatest stimulater known of the maternal supply; second, corn-meal gruel, and, third, plenty of water, and for a beverage, cocoa. Tea should be prohibited. The balance of the diet should be plain, unstimulating and nutritious. Beer is not beneficial and has been found to be even harmful. The same may be said with regard to the malt. Constipation and anemia must be corrected and sleep, exercise and fresh air provided. The importance of breast-milk for the child makes it advisable to continue nursing during the greater part of the first year, either with or without the assistance of a few bottle feedings. Serious responsibility in weaning, exclusive of bottle-feeding, causes a larger mortality than where at least partial breast feedings are maintained.

Infant Feeding.—Dr. Alexander McAllister of Camden, N. J., enumerated the difficulties growing out of the necessity of using an artificial food rather than a natural one. It is important to have a proper conception of the many difficulties that beset the feeding of the child, both in the food-making and in selecting the proper food for the child in question. It should be remembered that cow's casein is not mother's casein, and that even though cow's milk may be intelligently modified it can never be made like mother's milk.

Dr. C. F. Wahrer said that a few years ago the milk-supply of large cities was anything else but milk. He referred to the great advances that had been made by enterprising physicians and the dairymen in improving the milk-supply. He agreed that the best substitute for mother's milk is cow's milk, as pure as can be gotten. This may be slightly modified to meet the occasion, but he has seen many children thrive on pure cow's milk.

Dr. Charles G. Kerley of New York said that most children can be fed on properly-modified milk, but it must not be expected to feed every child alike. The milk must be changed as the child advances. Many physicians get discouraged because the child does not immediately improve when they have started the percentages too high to begin with. When fed artificially the child must be started on very slow percentages. These should be increased, at the same time they must be very carefully watched. The patient must be fed according to the information given by the napkin. A careful observation of this and its characteristics is absolutely essential for an intelligent understanding of the condition of the child. It is true that there are some patients that cannot be fed on milk at first, particularly those that have been experimented upon with all kinds of food and fed in all kinds of ways until their digestion is so impaired that they cannot tolerate cow's milk and sometimes are not able to do so for a long time. The speaker disagreed with Dr. Southworth regarding the value of the malt extracts. In a series of experiments for improving the milk of the mother in a number of ways some years ago he found the malt extracts and the malt preparations were more effectual than anything else in bringing up the percentage of fat.

John L. Morse of Boston thinks that milk idiosyncrasies are rare and are due, when found, to the improper modification of milk either for the time being or sometime in the past. As to malt extract, that is the best single thing to increase the quality of breast-milk. He holds that breast-milk, even if artificial feeding has to be resorted to, should not be given up, because the breast-milk ferments may still be retained and are important in the digestive process of the child.

Dr. J. P. C. Griffith of Philadelphia thinks that there is no doubt that in the majority of cases physicians begin with the percentages too high for the baby. In regard to the question of vomiting, the fact is lost sight of that the dilution is not sufficient and the percentage of fat is too high. Many of the idiosyncrasies of milk are due to the fact that the child, through past mismanagements, has lost its digestive power. All children who have had such digestive disturbances will relapse at some time. It is a great mistake to change the food with every little variation of the digestive power of the child.

Dr. A. C. Cotton of Chicago said that no one who has ever written a book or delivered a lecture can tell just exactly how to feed the individual baby under treatment. The only way to settle the matter is to decide it for one's self. The man behind the bottle must mix his milk with brains and suit the feeding to the baby in question. If there were not means of modifying milk at all and not any methods of feeding a child artificially, it would be the greatest boon ever conferred on humanity, because it would drive all mothers to the necessity of nursing their own babies and giving Nature's own food and would save more lives than all the doctors in the land. If every mother were assured that her baby could not live and grow to maturity unless it were nursed in the natural way, it would be the greatest incentive possible for mothers to nurse their babies instead of shirking their duty.

Dr. A. J. Jacobi of New York said that physicians generalize too much with regard to infant feeding. The only two points of value that have been learned in the last ten years is that cow's milk, which is pure, fresh and germ free, is the only food a child should be fed on artificially with proper modifications. In regard to the feeding of a newborn infant, of course, the baby is hungry, the baby ought to be hungry, and should be fed in a proper way, principally with water. There is no excuse for allowing a newborn baby to lose its weight during the first week of its life, and a small quantity of some simple food may be given. Plenty of water, however, flushes out the kidneys and the excretory organs and prepares the child for the proper handling of its food. If plenty of water be given the child at first, the uric-acid infarcts about which so much is heard nowadays would probably be prevented. Many of the cases of renal calculus would not occur. There is no one special method of feeding that is absolutely the true one to the exclusion of all others. In each case the food must be suited to the individual, but there is the one principle that the milk should be good, fresh, pure and clean, and should be germ free.

Adenoids.—Dr. W. Freudenthal of New York presented a paper entering into a consideration of both acute and chronic inflammation of adenoids with the indications for palliative and operative treatment.

The Treatment of Acute Earache in Young Children.—Dr. George L. Richards of Fall River, Mass., said that earache in children is a most troublesome and annoying affection. Many methods have been advised for its relief, but none of them have been attended with very much success. Several of these methods were mentioned only to be condemned. The author advocated a medicated gelatoglycerin bougie, which he has been using for some time with excellent results. The bougie is composed of the following ingredients: Carbolic acid, 7 m.; fluid-extract of opium, 6 m.; cocaine, 3 gr.; atropine sulphate, 3 gr.; water, 52 m.; gelatin, 18 gr.; dehydrated glycerin, 158 gr., a sufficient quantity to make 42 bougies. This gives to each bougie carbolic acid $^{1}/_{6}$ m. and fluid-extract of opium $^{1}/_{7}$, cocaine $^{1}/_{14}$ gr., atropine sulphate $^{1}/_{14}$ gr. These small bougies are particularly useful because they may be kept in the house and may be inserted by the mother at night when the child wakes up screaming with earache.

Angiosarcoma.—Dr. Cook of Chicago read a paper on this subject and presented a specimen of a tumor removed from a child of three and one-half years involving both the kidneys and filling up almost the entire abdominal cavity.

Clinical Features of Some of the Anemias of Childhood.—Dr. W. C. Hollopeter of Philadelphia said that the gastro-intestinal tract is more to blame in these troubles than the food that goes into it. The great primary cause of anemia in childhood and the least recognized is dental decay. This furnishes more cases of anemia than all the other disorders of childhood put together. The result of dental decay is to infect the mouth and stomach, poison the gastro-intestinal tract, producing a general catarrhal condition, deteriorating the blood and rendering the nervous system of the growing child unstable. Oral sepsis must be avoided therefore, and gastric catarrh prevented by a proper toilet of the teeth. The child suffering from anemia and catarrhal affection of the gastro-intestinal tract cannot grow and develop properly. Associated with decaying teeth will be found many cases of tonsillitis, pharyngitis, infection of the ear and gastro-intestinal infection, all of which may be prevented by a proper hygiene of the mouth. The second unrecognized factor in the anemias of childhood is nasal stenosis, which produces mouth-breathing. This is frequently the result of the acute infectious diseases, and can most generally be avoided by a proper toilet of the nose and mouth during acute inflammation. The third factor contributing to anemia in children is eye-strain characterized by vomiting, headache, etc., in car-riding and car-sickness, and may be prevented and corrected by proper glasses.

Retropharyngeal Abscess in Infancy.—Dr. John Lovett Morse of Boston reviewed the clinical history of these cases, which usually occur in the second or third year of life and are almost always secondary to disease of the adenoids. In the diagnosis the author emphasized the importance of digital examination of the throat. Suppuration rarely takes place in more than one lymph node though several may be involved. Retropharyngeal abscess is always preceded by retropharyngeal adenitis. When suppuration occurs it develops in five or six days and the abscess formation is in the lateral wall of the pharynx rather than in the back. Several interesting cases were reported showing that the prognosis in those cases treated by incision and evacuation of the pus is very good, while if they are not incised general infection may take place with an unfortunate result.

Report of a Case of Bulbar Paralysis.—Dr. A. C. Cotton of Chicago reported an instructive case of bulbar paralysis occurring in a girl of eleven and following diphtheria which had occurred several years before. The case was interesting on account of the various diagnoses that had been made before the paralysis was discovered.

Synostosis of the Skull with Universal Calcification of the Arteries in a Boy Three Years of Age.—Dr. David Riesman of Philadelphia said that arterial diseases in children are not nearly so rare as commonly supposed; they frequently follow some of the infectious diseases. The case reported was remarkable on account of the synostosis of the cranial sutures. It was pronounced an extraordinary case of malnutrition. Treatment was not of any avail. The author thinks that the malnutrition in the case was perhaps secondary to a congenital abnormality. He referred to the interesting analogy between cases of this sort and certain forms of infantilism and cretinism. An interesting feature of this case was the atrophic condition of the thymus gland, but what bearing this had upon the condition present the author is unable to say.

Spontaneous Hemorrhage in the Newborn.—Dr. I. A. Abt of Chicago said that there are two kinds of hemorrhage observed in the newborn child, traumatic and spontaneous. The paper dealt wholly with the spontaneous variety and was accompanied with the report of ten interesting cases. There may be a variety of causes producing hemorrhage. It is possible it may be from any one of a number of infections. One case was directly traceable to hereditary syphilis. The recent tendency has been to study these cases along bacteriological lines, and there are numerous micro-organisms that are thought to be causative factors. There are, however, many conditions as predisposing factors. Changes in the blood-vessels themselves may favor it. The character of the hemorrhage is in some slow and oozing and in others profuse at intervals. The sites of the hemorrhage are also varied. It may occur from the umbilicus, under the skin, from the nose, mouth, vagina, stomach, bowel, ear, etc. The temperature varies and in one case ran as high as 104° F., and remained elevated during the entire course of the disease. In another it remained subnormal. Cyanosis was a late manifestation in two cases. In a few icterus occurred and in one convulsions and muscular twitchings. Evacuations from the bowels were very offensive before the occurrence of the hemorrhages. As to treatment internal remedies have no influence on the disorder nor have local styptics any permanent value. The use of gelatin deserves some mention. The author concludes from a number of experiments on animals that the subcutaneous injection of gelatin will produce a toxemia in children. The nature of these toxins is not known, but they should be considered as ptomains. No further proof is now needed that gelatin causes a rapid coagulation of the blood. Undoubtedly it can be given with good results by the stomach, but it is very questionable whether it should be given by the subcutaneous method.

Dr. Rosa Englemann of Chicago suggested that inasmuch as infections were thought to play such a part in the hemorrhages that the germs found should be inoculated and cultures made so as to arrive at some classification of them. In addition to all these supposed infections there might be back of it all some constitutional trouble like syphilis. Certainly syphilis plays a most important part.

Dr. Holmes of Chicago related his experiences with gelatin subcutaneously in two obstetrical cases without reaction and did not see why it might not be used in children.

Dr. A. Jacobi of New York said that he had seen a great deal more of hemorrhages in the newborn fifteen or twenty years ago than he does now; he also saw at that time much more puerperal sepsis. At that time he almost considered the tendency to hemorrhage in the newborn a natural condition. He thinks puerperal sepsis has much to do with the occurrence of hemorrhage in the newborn. Another important cause is the insufficiency of the blood in certain conditions of anemia. It may also depend upon the structure of the blood vessels themselves. The interna of the vessels are not fully developed. Hemorrhage in the newborn is very apt to be copious, because there is a great deal of hemoglobin in the blood and yet it is less dense than in the adult. In the hematoma found after hemorrhages the blood in the child will be found uncoagulated, while in a similar case in the adult the blood would have been found coagulated. Meningeal hemorrhage is quite frequent and the speaker thinks most of the deaths occurring in the first day of life are due to this cause. Most of the cases of hemorrhage are post-natal, but he thinks puerperal sepsis is the most important cause.

Sporadic Cretinism in Children.—Dr. Englemann said that cretinism is relatively much more frequent in children than was formerly supposed. It passes oftentimes unrecognized. Koplik has pleaded most earnestly for its recognition. Heredity seems to be a factor in the adult form, but this has not been determined in the child. There is a growing opinion as to its infectious nature, but no very positive data have been obtained. The interdependence of nervous control over secretion is recognized as necessary to healthy functionating, but it is not certain whether disorder of such control is the cause. The process is a slow delay of the bony development of the body and a consequent dwarfism.

Dr. A. Jacobi of New York emphasized the importance of combining the different glands in the treatment. Many of the unsatisfactory results of glandular treatment are because the case is treated in only one direction. After having seen that a single ductless gland has been given without results a combination with other glands should be made. As a rule, thyroid feeding will be sufficient for myxedematous conditions. Another point is a shortening of the cranium, producing as a result a synchondrosis of the bones. Many of these are due to rickets which runs its course before birth. When the child is born there is a shortening of the bones at the base of the cranium because of the ossification of the occipital and sphenoid. The cases that have a short base of the cranium will be improved the least.

Dr. David Riesman of Philadelphia called attention to the fact that it was in this class of cases that preventive medicine might achieve its most brilliant results. The term athyria employed by the author should be used to designate functional athyria and not anatomical athyria.

Dr. Englemann, referring to the corelation of the glands, said that the combination of the pituitary with the thyroid showed quite a difference in the growth of the patient.

Chlorosis.—Dr. C. F. Wahrer of Ft. Madison, Ia., said that the diagnosis and treatment of this affection are easy for the skilled clinician, but there are conditions which may be mistaken for it or which may complicate it. The author reviewed the various theories of the etiology of chlorosis and described the early and latent forms among adolescents. There is no relation he thinks between this disease and phthisis.

Dermoid Tumors in Children.—Dr. S. W. Kelley of Cleveland reports two cases, one a dermoid tumor occurring in the testicle of a boy of two and a half years and the other in the ovary of a girl of eight.

Sudden Death in Infants with Lymphatic Constitution.—Dr. F. X. Walls of Chicago reported two cases of so-called thymic sudden death in infants and presented a brief review of the literature on the subject, showing the relation of sudden death in infants to the lymphatic constitution.

Recognition and Prompt Removal of Post-nasal Adenoids in Children.—Dr. Louis J. Lautenbach of Philadelphia pointed out the great frequency of this trouble and showed that it is among the poorly-nourished and scrofulous that adenoids are most commonly found. It is also oftentimes found in deaf-mutes and perhaps is the cause of their deaf-mutism in many cases. The author mentioned the various methods of determining their presence and modes of making the examination. The nature of the growths varies and presents different appearances. Many constitutional ailments follow in the wake of adenoids and their obstructive influences in respiration are productive of many bodily ailments. The posterior and upper walls of the naso-pharyngeal space are by no means always smoothly and regularly arched. There are frequently ridges observed on the posterior and upper pharyngeal wall and this fact is important in the method of operating. The author does not usually use an anesthetic in operating nor does he use curette, forceps and cauteries, but operates by scraping the mass out with the finger-nail or steel finger-nail. He lays stress on knowing the exact condition of the pharyngeal vault after the operation, and pointed out the necessity of constitutional treatment in all cases of post-nasal adenoids.

Election of Officers.—Officers elected for the ensuing year were Dr. John C. Cook of Chicago, Chairman, and Dr. Thomas S. Southworth of New York, Secretary.

SECTION ON OBSTETRICS AND GYNECOLOGY.

(Continued from page 1164.)

SECOND DAY—JUNE 11TH.

High Amputation of the Cervix versus Hysterectomy for Operable Carcinoma of the Cervix.—Dr. C. C. Frederick of Buffalo said that the results of cancer of the cervix were so different from those of the body of the uterus that it must be considered entirely alone. No woman operated upon for cancer of the cervix should be considered cured unless she has lived five years after the operation. Recurrence is in the scar and removal of pelvic lymphatic glands is not of much service. The results of hysterectomy for cancer of the cervix are not what some enthusiasts would lead one to expect. Amputation of the cervix at or above the internal os is much simpler and less dangerous; the results as to relapse are as favorable as from hysterectomy; the period of relief is as long; the patient is able to be up in a shorter period; the shock of the operation is less and the results in general are as good. The only argument for hysterectomy is that recurrence is probably accompanied by less hemorrhage and discharge. Of 100 cases seen by him, only 26 were considered favorable for hysterectomy. On 14 of these hysterectomy was performed, with 13 recurrences and deaths, 1 recovering. On 12 high amputation of the cervix was performed, recurrence occurred in all.

Frederick is as well pleased with the results of high amputation of the cervix as with hysterectomy, and with the arguments in favor of the operation itself he does not see why it should not be adopted. The free edge of the vagina is sutured to the edge of the uterine canal to prevent stenosis and dysmenorrhea. Statistics of hundreds of cases were read, one report being that of Dr. McMonagle of San Francisco, with 482 operations and 473 recurrences and 471 deaths.

Operation for Recurrence of Cancer After Hysterectomy.—Dr. E. W. Cushing of Boston reported a case of apparently hopeless recurrence after vaginal hysterectomy upon which he did a most radical operation with apparent cure. Through abdominal incision the pelvis was thoroughly cleaned of all the tissue that could be removed, the operation being completed three weeks after through the vagina, the patient's condition not justifying completion at the first operation. One ureter was cut during the operation and a urinary fistula which was the only untoward result of the operation. He believes this operation justifiable in cases of early recurrence when the radical operation was not done at the primary removal. Cases after operation should be observed for years to detect early any evidence of recurrence. This is made less liable if a radical operation be done by freeing the uterus and all pelvic tissues through abdominal incision and then removing the uterus through the vagina to avoid infection of the wound.

Dr. Gustav Kolischer of Chicago said that cancer of the cervix was too indefinite in reporting cases. The portion of the cervix involved should be stated. The mortality of hysterectomy is high. A statement not agreed to by other speakers was that recurrence rarely took place in the scar but in the lymphatics of the parametric tissue.

Dr. W. H. Wathen of Louisville disapproves of high amputation of the cervix or any operation that is not radical.

Dr. H. O. Marcy of Boston finds that it is wiser and safer to do the most radical operation instead of high amputation. Radical operation through abdominal incision gives him the best results. This seems to be the experience of the great majority of operators. Why not do this operation then instead of those of earlier times when conditions were not so well understood as now?

Dr. G. B. Massey of Philadelphia recommends the use of electrolytic salts of mercury by local application. This has cured one primary growth and alleviated five recurrences.

Dr. E. E. Montgomery of Philadelphia says his own experience has led to the conclusion that it is desirable to get rid not only of the cervix, but also of the entire organ. Recurrence after either operation is due to portions of the growth being left. Squamous-cell growths of cervix are more amenable to treatment than are columnar celled varieties in the canal. In no class of cases is the use of the cautery more strongly indicated than in the removal of these growths. Narrowing of the canal, dysmenorrhea, and collections of material in the uterus are arguments against high amputation. There is also increased tendency to development of the disease in the scar tissue thus left.

Dr. C. P. Noble of Philadelphia is not so pessimistic as some of the speakers. His own statistics show 20 per cent. of all cases of cancer of the uterus to be free from recurrence after five years. These include cancer of the fundus, it is true, but there should be 10 per cent. of cures in cervix cases. In very early cases he does the most radical operation he can, in very bad cases which give a high operative mortality under serious operations he does palliative operations. If they improve, he may then use more radical treatment.

Dr. W. H. Humiston of Cleveland said that of all the cases he has seen where the trinity of symptoms—pain, hemorrhage, odorous discharge—were present not one case is alive to-day. In cancer of the body of the uterus he has almost phenomenal success, basing early diagnosis largely on the examination of scrapings.

Dr. L. H. Dunning of Indianapolis said that in cancer of the cervix with no apparent involvement beyond, 15 per cent. of the patients have survived five or more years. It should not be said that high amputation of the cervix is attended by no mortality. The after-condition of patients upon whom total removal of uterus and adnexa is performed is better than those where amputation is done.

Dr. A. J. Downes of Philadelphia emphasized the value of electrothermic instruments in operations upon these cases. He finds they give better results than those attained by the use of ligatures.

Dr. J. H. Carstens of Detroit is doing fewer vaginal hysterectomies. He prefers to prolong life in severe cases by palliative treatment.

Dr. C. C. Frederick of Buffalo in closing said that recurrences follow the best methods of the best operators. If the radical operation is to be done he commends that introduced by Dr. Werder. He still sees no reason for removing the body of the uterus when it is not involved.

Hemostasis of the Broad Ligament.—Dr. H. P. Newman of Chicago said the tendency of late years had been to do away with ligatures. The objects desired by methods of hemostasis, in operations are (1) security against hemorrhage; (2) protection against sepsis; (3) the minimum injury of the parts; (4) the absence as much as possible of foreign bodies. Electric cauteries can be used only when electricity is at hand. Angiotribes have too many modifications and are often not rightly used. His own experience with powerful clamps has been gratifying, no hemorrhage having followed their use. Sometimes he enforces their work by the use of catgut ligatures on the ovarian or uterine arteries. The clamp is applied, then the ligature to the main artery on the broad ligament side of the clamp. The clamp is then removed and no further treatment accorded the stump. A second ligature, when necessary, can be applied before or after the removal of the clamp. The advantages claimed for this method are (1) complete and permanent hemostasis with no slipping of the ligature; (2) inability of the artery to contract and form a hematoma or hematocele; (3) multiple thrombi are formed and all vessels thus occluded; (4) there is no strangulated stump to slough; (5) foreign material is reduced to a minimum; (6) the danger of shock is materially lessened; (7) convalescence is hastened.

Dr. A. Palmer Dudley of New York said that the effect of crushing instruments on the nerves and lymphatics should not be forgotten. Authentic cases reported show that patients may die after these operations from tetanus, hemorrhage, or shock. Secondary hemorrhage follows as many cases as it does where the ligature alone is used. If the danger of the ligature is sepsis, why apply even one? He thinks the method of ligation will be used when crushing instruments have become a curiosity. The use of the ligature and uniting the peritoneum over the stump are more perfect surgery.

Dr. A. Goldspohn of Chicago spoke of his experience with crushing instruments on tissues, not on living beings. He found it difficult and uncertain to obtain the thinness of tissue required, and there is danger of tearing off the tissue to be crushed. The time in using the clamp and ligature is longer than necessary in the use of the ligature alone.

Dr. J. Riddle Goffe of New York thinks crushing instruments are of value. He frequently, but not always fortifies with a ligature. This method leaves a thin stump, no suppuration follows, and no adhesions form.

Deflected Presentation in Labor.—Dr. Gustav Kolischer of Chicago spoke of the varieties of presentation depending upon degrees of deflection of the head and of the diagnosis and management of anterior vertex, brow and face presentations. In anterior vertex the resistance by the back of the fetus is more in the middle line and internal examination shows the anterior and posterior fontanelles on the same level. The later condition in this presentation is the pressing of the anterior lip of the cervix against the pubic arch with lack of full dilatation of the external os. The cervix becomes more and more distended as the child is delivered into the lower uterine segment and rupture threatens. Interference is demanded in the shape of transformation into an occiput presentation or the application of forceps, this being a frequent indication for the employment of axis traction. The technic of forceps delivery was given. An important diagnostic point in face presentation is that the resistance of both the body and limbs of the child are felt in the same half of the uterus by external examination. Delivery may be secured by version or by applying forceps, the oblique position, if present, being corrected by the hand before the forceps are applied. These conditions due to deflected presentations may easily lead to complications but are generally readily managed by interference if the diagnosis be made correctly and in time.

Dr. R. Hohnes of Chicago said that extension was of vital importance when the occiput presented posteriorly, but its presence was not of importance in anterior presentation. Posture should be used in all cases of occiput posterior. In face presentations it is to be remembered that the fronto-mental line passes almost transversely during descent. This is recognized in Europe, but is not sufficiently noted by American textbooks. As a consequence, practitioners apply forceps, when that procedure is the last thing that should be employed. In mentoposterior positions, employ manual correction, but in mento-anterior, version should be done.

Massage and Exercise in the Management of the Puerperium.—Dr. C. S. Bacon of Chicago reported the good results obtained from the above expedients. He believes that rest in bed for two to four weeks after labor is generally desirable for the patient to recuperate from the exhaustion of pregnancy and labor. This maintenance of the horizontal position is especially desirable in patients with poor muscular development in order to avoid the occurrence of splanchnoptosis. Massage and exercise are necessary to counteract the effect of remaining in bed upon the muscles, circulation, secretion, excretion, etc. The measures advocated are not new, but are mentioned because massage is not taught in medical schools and many physicians do not employ it because a nurse is not available and they themselves do not understand the technic. The various manipulations in massage and exercise movements were detailed by Bacon. In massage of the breast the mistake is made by nurses of making massage toward the nipple in all cases. More often the breast is distended by blood and lymph more than by milk and massage in the direction of these channels is of more benefit and gives much less pain. No ill-effects upon the lochial discharge from the exercise is noted but abdominal movements had better be postponed for one week after labor. Exercise is begun on the second or third day, the patient having been allowed to move around in bed as she chooses. Patients treated in this way can walk as soon as they get up and are allowed to walk at short intervals for some days before they are allowed to sit in a chair for any length of time.

Dr. R. Holmes of Chicago said that arbitrary rules were not good and if a healthy woman has gone through a normal labor he sees no use of keeping her in bed for more than a few days. He has three tests for determining when a woman may get up: (1) The degree of tenseness of the abdominal wall; (2) the condition of the perineum; (3) the degree of involution of the uterus.

Contribution to Ureteral Surgery.—Dr. X. O. Werder of Pittsburg said that the wounding of a ureter now did not lead to the radical operation of nephrectomy as in former days, but was an accident of importance. In an experience of over 1,500 abdominal sections he has injured the ureters four times, the cases being detailed. In three, immediate implantation into the bladder was performed, success resulting in two and vaginal fistula in the other. By a novel procedure the upper portion of the vagina was subsequently made a diverticulum of the bladder, completely curing the patient. The mucous membrane of the two organs were united by suture. Cystoscopic examination afterward showed the bladder to consist of the two parts united by an opening large as the thumb. The operation is recommended, as only the upper fornices of the vagina are used and cohabitation is not prevented. These operations have shown the unreliability of catgut sutures in ureteral implantation into the bladder.

Some Cases of Ureteral Stricture.—Dr. H. A. Kelly of Baltimore reported several cases of stricture of the ureter and spoke of the diagnosis and treatment. More discrimination is needed in dealing with pathological conditions of the urinary tract above the bladder. But little is said of stricture of the ureter. The condition is not often urgent as in urethral stricture and is let alone until the ureter distends, the condition works back upon the kidney, and that organ is often removed for hydronephrosis when it is the effect and not the cause. Cases of hydronephrosis should be named cases of ureteral stricture. This would call attention to the true condition. The importance of recognizing the condition is that many cases are amenable to direct treatment. The value of saving a diseased kidney was illustrated by several instances in which the patient had lived for several years with only one kidney and that a damaged and infected organ. Stricture almost always occurs at the lower end of the ureter, only one well defined stricture at the renal end being on record. The most common cause of stricture is ureteritis due to the tubercle bacillus, the gonococcus being the rarest causative organism. There is no particular diagnostic symptom of ureteral stricture but persistent pyuria is an indication. Diagnosis is made by direct examination of the urinary tract. The distended ureter may often be felt by vaginal examination or through an air-distended rectum. By the cystoscope the area surrounding the orifice of the ureter is swollen and the orifice may be only a dimple. There is difficulty in the introduction of a catheter. Often when it is introduced there is an immediate and steady flow of urine, neither of which is found in a healthy ureter. Catheterizing the pelvis of the ureter shows it to hold an abnormal amount of urine. The bite of the stricture on the catheter may be felt.

Treatment: In early cases much can be done by getting rid of the infection and by dilatation of the stricture. In aggravated cases the stricture can be excised and the ureter implanted into the bladder. In tuberculosis the entire upper urinary tract must be excised.

Dr. H. P. Newman of Chicago detailed a case of destruction of the bladder and urethra, due to delivery while the patient's bladder was full, in which he contemplates a radical measure to restore the urethra, the patient not allowing closure of the vagina. The contemplated procedure is the use of the very much contracted uterus to form the floor of the bladder. The cervix is to act as the urethra, the internal meatus to be the external os and the external meatus to be formed of an opening in the fundus.

Dr. Gustav Kolischer of Chicago spoke of the difficulty of measuring the length of a ureteral stricture. He does not agree with Kelly that the tubercle bacillus is the most frequent cause of ureteritis.

Dr. H. A. Kelly of Baltimore said that a stricture could often be located by measuring the distance to the opening of the ureter. The catheter is introdnced and the pelvis of the kidney filled with fluid. With the patient in the erect posture the catheter is withdrawn until the fluid ceases to flow, which point is approximately the upper limit of the stricture. The difference of the two measurements is the length of the stricture. He finds that injury of the ureters during abdominal operations occurs less frequently as the operator's experience increases. Bisection of the uterus often helps avoid injury to the ureters. Careful inspection of the position of the ureter when the abdomen is opened is of great importance.

A Plea for the Early Diagnosis of Ectopic Pregnancy.—Dr. H. D. Ingraham of Buffalo said that ectopic pregnancy is often mistaken for miscarriage, appendicitis, pus tubes, etc. When rupture occurs the diagnosis is easy in most cases. Diagnosis should also be made before rupture, but examination of pregnant women for that purpose is not advisable. Three cases of mistaken diagnosis of ruptured ectopic pregnancy by general practitioners were detailed, death occurring in each case. If the history is obtained and a careful examination made in these cases, the diagnosis should be made. At least if ectopic gestation is not diagnosed the physician should recognize that a condition demanding operation is present. Paroxysmal pain, with tenderness in the pelvis, the condition growing worse, with a mass forming in the pelvis—this should demand operation before the patient becomes moribund.

Dr. C. L. Bonifield of Cincinnati said that general practitioners in his vicinity are diagnosing these cases. One of his hospital internes diagnosed two cases. In many cases hemorrhage is not fatal to the patient at the time of rupture.

Cesarian Section Made Necessary by a Ventrofixation.—Dr. W. M. Findley of Altoona reported this interesting case. The patient was a woman of forty-three, who seven years before had been subjected to a ventrofixation of the uterus. Difficulty in labor led to the discovery that the cervix could be reached only by the introduction into the vagina of the hand and arm to the elbow. The abdomen was opened and a Porro operation done, the patient dying on the table, apparently from chloroform poisoning, that drug having been administered for some time by the attending physician to guard against rupture of the uterus. The two silkwormgut sutures used to fasten the uterus were in perfect condition. This case suggests the necessity of inquiring of every patient if any operation has been previously performed on them.

(To be continued.)

BOOK REVIEWS.

The Medical Treatment of Gall-Stones. By J. H. Keay, M.A., M.D. P. Blakiston's Son & Co., Philadelphia.

Dr. Keay's little book of 125 pages is an excellent exposition of the medical measures that may be of service in the treatment of gall-stones. His reasons for writing the book are that a long and painful personal experience of this disease and painstaking examination of many who have similarly suffered have forced him to certain conclusions differing from those of Mayo Robson, Kehr, and other writers on the subject. As the result of the success of brilliant surgery, he adds, it seems to be forgotten that cholelithiasis is a disease especially amenable to medical treatment.

Perhaps the note sounded by Dr. Keay is necessary in order to restore the harmony of proper conservative opinion and to prevent hasty decisions as to the necessity for operating in certain cases. Certainly this little work summarizes all that can be said for the medical treatment of gall-stones, and because of this it is well worth reading by every medical man interested in the subject.

Manual of Childbed Nursing, with Notes on Infant Feeding. By Charles Jewett, A.M., M.D., ScD., Professor of Obstetrics and Diseases of Women in the Long Island College Hospital. Fifth Edition. E. B. Treat and Company, New York.

The concise manner in which the work of the physician and that of the nurse are outlined in this book will save much thought on the part of the attendant. for each article necessary, even to the exact quantities of each of the several antiseptics, is mentioned in the order of its use. The headings Pregnancy, Labor, The Puerperal Period, Points to Be Noted by the Nurse, Care of the Mother, Care of the Child, etc., indicate the scope of this brief and practical manual. The book is designed for physicians and nurses, and a chapter is devoted to instructing the nurse what to do if the birth take place in the absence of the physician. Artificial feeding is given adequate treatment.

Materia Medica, Pharmacy, Pharmacology and Therapeutics. By W. Hale White, M.D., F.R.C.P., and Reynold W. Wilcox, M.A., M.D., LL.D. Fifth American Edition. P. Blakiston's Son & Co., Philadelphia.

Compactness, accuracy, and utility are the attributes of this excellent manual now before the physician and student in its fifth edition. The merits of the work are so well known that no further commendation is necessary from the reviewer's hands. Its almost universal adoption has set the stamp of practicability upon it. The present edition differs in no essential particular from its predecessors. It is 40 pages longer, contains all of the newer synthetics which have proven of service and is a thoroughly modern and comprehensive textbook, admirably adapted to the needs of students.

BOOKS RECEIVED.

The Medical News *acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the* Medical News *will shortly appear.*

Transactions of the American Pediatric Society. Vol. XIII.

The Practitioners' Manual. By Dr. C. W. Allen. Second Edition. 8vo, 889 pages. William Wood and Company, New York.

A Practical Treatise on Smallpox. By Dr. G. H. Fox. Quarto. Illustrated. Parts I., II. J. B. Lippincott Company, Philadelphia and London.

Practical Dietetics. By Dr. W. G. Thompson. Second Edition. 8vo, 828 pages. Illustrated. D. Appleton and Company, New York.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. 80. NEW YORK, SATURDAY, JUNE 28, 1902. NO. 26.

ORIGINAL ARTICLES.

MEDICAL ETIQUETTE AT THE DISPENSARY CLINIC.[1]

BY THOMAS J. HILLIS, M.D.,

OF NEW YORK.

IN the many vocations of life men engaged in a common pursuit adopt rules for their guidance and regulate their actions and behavior to each other in accordance with such rules. The advantage to be gained by this mode of procedure is plain, since individuals do not always work in harmony even when concert of action is of the first importance. These rules are called laws when applied to the State, by-laws when applied to a society. Stimulated to its highest development, this community of interests is known in the arts and industries by various names. In the profession of physic it is called medical etiquette. It differs from other forms of etiquette in that it deals with the feelings and finer instincts of men as much as with the observance of the rules it has formulated for their guidance. It has added a codicil to the will of society by clothing the naked form of law with charity, good-will and peace on earth. To place this reciprocity of feeling on a sure foundation has been the life-work of some of the great medical minds of the past. Those great men taught that the spirit of tolerance and the cultivation of a kindly professional relation were hardly second to being skilled in the profession itself.

This spirit of good fellowship and consideration for the infirmities and shortcomings of their fellows (now fast dying out) has buoyed up and furnished the motive power that has carried our beloved profession with safety through stormy and trying times, while other crafts and callings were disappearing lights on the horizon of the ages.

In our time the science of medicine has moved with rapid stride in the direction of higher development, jumping with phenomenal celerity from one grand discovery to another until now, the opening of the twentieth century, the wildest dreams of the fathers are more than realized. While, however, the science of medicine has so far advanced, the etiquette of olden times has not kept pace. It has lagged behind, perhaps scared at the amazing discoveries the microscope and X-rays have made, or perhaps want of confidence in the latter-day physician, who should be its natural guardian and protector, has rendered it diffident and shy. However this may be, certainly it is not the constant companion of the modern physician in his ceaseless rounds of professional activity. This laurel wreath which old-time physicians wore with pride is now withered in an atmosphere of twentieth-century commercialism, unseen but felt on every hand. Fading in the distance like a landscape the traveler leaves behind, medical etiquette is disappearing from the modern dispensary clinic, and, pray, who or what has taken its place? From inference we are led to believe it is some ugly thing—a monster belching pestilence and death from a hideous mouth. Not that. Oh, no! but a gentleman with an am-glad-to-see-you smile, smooth in manner and dress, with a dagger up his sleeve, prepared to use it on a professional brother if he run counter to his business interests, however unconsciously.

The race for gold is on and, not without reluctance it must be admitted, the members of the medical profession are not laggards in that race. We can see them now, without any stretch of imagination, tumbling over each other in hot pursuit of the almighty dollar. The suave and polished physician of upper Fifth Avenue is as fleet of foot in the race as is the brand-new doctor who came to the lower East Side two weeks ago. Inspired by the same motive and moved by a common impulse, those brothers in physic have gained on and are now rapidly outrunning the auctioneer and the pawnbroker, men who always have had reputations enviable for sharp practice and alertness in turning a dollar. At present the great bulk of practitioners in New York could easily dispense with medical etiquette altogether, and they would, did they not find it convenient to hide behind once in a while when overtaken by calamity.

The writer will at some future time throw a searchlight on the dark corners of medical practice in circles high and low. It is now his intention, however, to dwell on the kind of medical etiquette practised in some of the hospital and dispensary clinics of Greater New York. Those clinics occupy a large space in the public eye and are factors of importance in molding opinion as to the relative merits of individual physicians or the gross estate of all physicians engaged in private practice, with special reference to those doing service in the lower stratum of a large and hetrogeneous population in the tenement districts. The writer wishes it understood that he has no desire to assail or question the motives of the great body of hospital and dispensary clinicians. Some harsh things, however, will be said of the sharks and buzzards that infest medical practice and prey on the brother who is lagging behind or has fallen by the wayside. Soldiers in arms will carry a wounded comrade to a place of safety at the risk of their own lives, but the medical vultures, cowards by nature, so plentiful in our profession, will tear him to pieces and devour even his bones.

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[1] Read before the New York County Medical Society, May 26, 1902.

The Dispensary Clinic.

A cause of deep concern to practitioners, and a thing that has assumed the proportions of a grievance, is the use made of the hospital and dispensary clinics, chiefly the latter, by designing and unscrupulous persons who enter them ostensibly for the purpose of giving a helping hand to the sick poor, incidentally pursuing some specialty in line with their inclinations; but in reality they use them as a means to increase their practice by the opportunity they afford to divert business to their empty offices. Those persons are eager to attach themselves to one or another of the many clinics held daily at the dispensary, the hospital or the post-graduate school, but, wherever held, the dispensary is supposed to be for the sole and exclusive benefit of the sick poor, not an annex to the office of one of its assistants.

Angling for practice and patients has lately taken on the dignity of a fine art. Inveigling a patient from the clinic to the office is a piece of strategy not second in importance to knowing how to treat a case. Nowadays the clinical professor of a department (and there are from six to eight of those departments in every dispensary clinic) has a retinue of assistants who are known by various names, as, chief of clinic, lecturer, instructor, assistant, etc. These retainers, as a rule, have a remarkable affection for the person of their professor; to them he is the essence of all things great and good and exceptionally learned in the branch he has undertaken to instruct them in. No henchman or follower, in the days when knighthood was in flower, was truer to the lord of the manor than are most of those assistants to their learned professor. The chief of clinic, too, is by no means an unimportant personage, being a unique and somewhat consequential person himself—indeed, as much so as is the aide-de-camp to a general in action on the battle-field. Chief, in a medical sense, is an imported phrase and probably had its origin in Vienna, the Mecca of the medical hobo.

Each of the numerous clinics has in one capacity or another as many as from five to twenty of these clinical retainers. The charity clinics and so-called schools of medicine in Greater New York number all the way from one hundred and twenty-five to one hundred and fifty. However, only six or eight of them, except the college and hospital clinics, are of any importance. More than half of the physicians in regular practice in Manhattan are, or pretend to be, specialists. From this list the hospital and dispensary draw for their clinical recruits. The honor of being on a clinical staff is much sought after by physicians. One of several reasons for this is that one's name will appear in print, affording an opportunity for proud exhibition to one's grandmother or other admiring relative or friend. Then, again, the dispensary ledger will preserve it forever to the satisfaction of one's descendants delving through the archives for evidence to glorify the memory of an ancestor; or, greater still, the name may be sealed in an urn with that of the professor and other great lights of the medical and municipal world, and buried under the corner-stone of the new dispensary in project, to have a resurrection some day and be spoken of in praise by the people witnessing the tearing down of a dispensary to make place for a stable or a department store. Then, again, he who is a member of a medical or surgical staff at the dispensary lays the foundation of an honorable ambition, is protected from the biting winds of fortune and from the viscissitudes of professional life which the poor plodding practitioner who has no connection with any hospital or dispensary has to face to keep the wolf from the door and to furnish himself with a morsel of bread.

Now, it can be safely presumed that the physician, young or old, who has associated himself with a clinic has taken a step in the direction of success in the profession he has chosen; and the presumption is probably correct if his aim be greater efficiency for himself in the special branch he is pursuing, together with a disinterested and manly concern for the human waifs who should furnish only the grist for his clinical investigations. If, however, his object be to extract a fee from a delicate woman who presents herself for treatment to him because she is not able to fee a private physician and who has a dollar in her pocketbook to pay her room-rent which falls due to-morrow, and of which he knows, his object in associating himself with the clinic is not an honorable one.

The consensus of opinion among all classes is that those clinics are just what their names imply —charity clinics—and designed for the very poor, and that only such should be permitted to be beneficiaries of them; and, further, that an honorable physician is above the petty tricks and sharp practices by which poor people are lured to the offices of many of the army of clinicians who are in association with charity practice. This army of dispensary clinicians, nearly all associates and close friends of the professor and his chief and operating under their trained eye, will avow in the same breath that they are animated only by one motive, which is to look well to the interests of the sick poor who throng their dispensary. If they do this the measure of their usefulness is filled, since they have discharged every obligation imposed by profession and public. Unfortunately, however, there is ground for presuming that they are inspired by other and mercenary motives, and so coyly and so deftly do they put them into practice that it is all but impossible to catch one of them in the act of making a dishonorable proposal to a charity patient at the clinic. Every member knows in a general way (though there is no notice to that effect posted in the halls or consultation-rooms) that it is not good manners, nor in accordance with medical etiquette, to solicit patronage at charity clinics (nor, indeed, for that matter anywhere else), yet undoubtedly a great many of them do it.

The patient who is able to pay a fee should have no standing in a charity clinic, and, if he enter, should be ejected without ceremony, as it is not intended for this class. By approaching that clinic and asking medical alms such a one is infringing on the rights and privileges that society kindly has accorded to the poor; besides, he is robbing someone of a medical fee and that someone may not be connected with any dispensary, college or hospital, but nevertheless qualified in his profession and always ready to render aid to a fellow creature in distress, whether he has or has not the means to pay for professional services.

The woman wearing diamonds who entered the clinic yesterday, who had a pocketbook in her hand bulging with greenbacks and who was accepted there as a charity patient, cheated this man out of a fee that rightly belonged to him, and cheated not only him but all men and women who by honest and conscientious methods discharge obligations imposed by law and usage. These things are known to the professor and his numerous assistants, and to them they say "Amen" loudly and unanimously. Unfortunately, though, for the practice of medicine, the practitioner and the poor themselves, the matter ends here, as no concerted action has ever been taken to punish the guilty, even though the guilt be established—simply an investigation that is not an investigation at all, an explanation that is not an explanation, and a coat of kalsomine with promotion to soothe the disgruntled and outraged feelings of one accused of a crime so heinous and yet so innocent. This sort of thing has gone on so long and has been carried with such a high hand that a crisis has now come, when general practitioners, however reluctant, are compelled to look with suspicion on every medical clinic, no matter who its sponsor or what his standing in the community may be. Rightly or wrongly, the general practitioner has come to regard those clinics as clubs, gotten up for the special benefit of the individual members who compose the staffs, not for the humble and sick poor, who are of small consideration at those club-gatherings.

In these clubs the art of diplomacy is cultivated with great assiduity and success, and, as has been pointed out before, the shrewdest diplomat is the most successful clinician. Every device know to the craftiest and most resourceful mind is called into requisition and put to good service at those club-gatherings or clinical rehearsals to lure the poor sick man, not seldom the sick woman, to the office of a member who may be, but seldom is, a professor, not often a chief of clinic, more likely a lecturer or instructor, but oftenest is an astute assistant who has assumed control in the absence of his superiors (and the absence of one or another of them is a very common occurrence). These club members have learned to know human nature as well as a child does its mother, and they benefit immensely by this knowledge. The chord they play on is Vanity and in their practised hands it seldom gives out a discordant sound.

How They Operate.

In the corner and on the sly a clinical assistant says in a whisper that is sympathetic and catching, but free from any suspicion of interestedness:

"I see, madam, you are pale and know it is not your natural color; your better nature is restrained and suffers from contact with the crowd of beggars besieging my clinic. I am not discerning, yet I can see by your address and manner that you have seen better days and are probably only temporarily reduced in circumstances, and for this reason grieve to see you here mingling with such shoddy associates. You are young, too, not over twenty-five." "Yes, I am thirty, Professor; you flatter me; I don't know how it is but I feel better now than I did, as my head does not ache me so and my rheumatism is nearly gone." "Madam, will you briefly describe your symptoms, for I am in a hurry to reach my office, as the crowd assembled there is growing impatient for my return, so every minute is precious." * * * "Now, from the history you have given me with such clearness and candor, marking every stage of your disease as you proceded, I am convinced your suffering must have been great and your constitution as tough as hickory wood to stand the awful strain put upon it. Any other woman but yourself would have gone to pieces long ago from the burden you have carried and the sufferings you have endured from your disease and its numerous complications. I infer from your very lucid description of symptoms that the treatment accorded you by your family physician was not the correct one, but I will not blame him too much, as the poor man acted no doubt according to his light, which, as seen by me, is as dull as a tallow candle. He is the sort of fellow who should hide his luminary under a bushel, but he will not, to the detriment of a sick, refined and impressionable nature like yours. I am glad the stupid fellow has no connection with my clinic. I see, however, from this book of reference on my desk that he is a member of the Physicians' Mutual Aid Association. Poor fellow! he will need aid in the near future if he diagnoses other cases and gives treatment as he done in your case."

He has now found favor in her sight, for she is melted to the fusion point and addresses him thus:

"Professor" (though he is only a third assistant), "what are your office-hours? I would like to consult you there, but really I fear I cannot afford it. Being a very poor woman, luxury is a stranger to me."

"Madam, my professional talent outside the walls of this historic dispensary is only at the service of those who can afford to pay a large fee.

I am tempted to make an exception in your case, as it has features that interest me as well as does the sad history which you have related. My hours for consultation are from 9 to 1, during which time rich patients crowd my office, eager for their turn [though as a matter of fact his office is always empty]. I am making a sacrifice in order to meet you at 4:30, an hour which I am in the habit of devoting to repose after the fatigue of my numerous professional duties. Then, to-morrow at 4.30—consultation fee $5.00, just half what I charge during my regular consultation-hours to my wealthy patients. Remember, don't call between the hours of 9 and 1, for in that case the fee would be $10.00, a sum altogether beyond your means."

Another slick one of the guild is at work in the opposite corner of the hall, as much as possible away from the surging mass which throngs the clinic, and begins in this wise: "Madam, who attended you in your last confinement, a doctor or a midwife?"

"A doctor; I don't recollect his name. My husband does not believe in midwives."

"Well, he should be arrested, whoever he is, for the bungling work he left behind him, for, let me tell you, he did you a gross injustice and made it most difficult for another physician, no matter how good, to remedy the evil he has done. No wonder you have backache, bearing-down feeling, no appetite, with chills and restless nights; for I found on examination a badly-torn perineum, a laceration of the cervix, with part of the floor of the pelvis torn away. The instruments your physician used were not suitable for the case, nor did he display any skill in using them; why, he did not take even the ordinary precaution to sew up the tear in the pelvic floor, which he should have done for his own sake, if not for yours, in order to better hide his bungling. His, indeed, is an atrocious crime, to punish which the strong arm of the law should be invoked. There is not the shadow of an excuse for this outrage. I reach this conclusion after making allowance for every emergency that might arise during his attendance on you while in the parturient condition. I repeat, your doctor should be punished, not as a vengeance, but as a warning to others who might follow in his footsteps. I have no desire to further discourage you, madam, but will say you cannot again give birth to a living child while the conditions you have described and which I have ascertained exist. As a preliminary to this, it is essential that the parts be brought together, in which case the organs will resume their natural relation to each other. Mrs. A., an operation in your case is imperative; until it is done the distressing symptoms of which you now complain will daily grow more acute, till finally life will become too burdensome even for one so courageous as you are to bear. Delicate and retiring natures like yours shrink at the thought of entering a public hospital to undergo an operation. Such a course on your part at present is unnecessary, as I, with my colleagues, Drs. J. and K., both connected with this dispensary, have organized a private hospital up-stairs, which affords all the advantages of the best public hospital without any of its defects. One hundred and fifty for the operation and twenty a week board, with the privilege of being seen at all hours by your friends. You can see our terms are reasonable. Take advantage of this opportunity, as we have only two empty beds at present and they are liable to be filled at any moment."

"Professor, I appreciate your interest in me and feel grateful for your kind offer, but you are in error when you say what you have pointed out and described is an insurmountable barrier to maternity, as I have given birth to three children since that occurrence. That was with my first baby, a boy, eight years ago. At that time my husband was out of employment and unable to pay a physician. It was then the lady in whose service he was at a previous time sent me a professor from the Lying-in Hospital. It was this professor who atttended me with my first child and who performed the operation which you say was so unskilfully done. He did, though, take the precaution to sew up the tears that resulted from his bungling work; but on a subsequent confinement—the next—the stitches gave way and the tissues tore like brown paper. Dr. B., who attended me in that accouchement, said this state of affairs occurred because the operation was so poorly done, and, although he came promptly when sent for, the baby was born before he arrived."

The doctor grew uneasy as his patient recited the concluding part of her story and seemed ill at ease; he held his hand to his face as if to hide something.

"Doctor, you have changed considerably since then, for it is you who attended me at that time."

"Madam, you must be mistaken, as my connection with the Memorial Lying-in Hospital was severed then."

"Doctor, I am not mistaken for one thing fixed itself in my mind; I observed it between pains, and it is that you had a birthmark on the left side of your face; it is there yet, years have not effaced it, neither can your wiskers and your hand hide it."

Quiet confidence games like those cited are being employed every day at the dispensary clinic by some unprincipled physician who has managed somehow to associate himself with the clinic for this purpose. The secretiveness and stealth in his manner of operation make it almost impossible to catch him in the act of robbing the practitioner not only of his means of support, but of his character and professional reputation as well. The physician at present has no way to protect or defend himself against the accusations and malevolence of these men; even when confronted with the patient and the facts, they make a general denial and in a negative sort of way repudiate the transaction.

Now, it so happens that the better element of the working-classes, and sometimes people of leisure, will by some sudden change of fortune find themselves for the time being in straits; possessing some ill-considered pride, they do not wish their family physician, who has been a partner in their better days, to be a witness of and a sharer in their temporary misfortune, and turn to the charity clinic to bridge them over the difficulty till fortune changes; they will probably not be known there, certainly the doctors won't know them, while their prescription may answer a temporary purpose. Then, again, they may go to those clinics for a more hopeful diagnosis than their family doctor has accorded them; but no matter what the motive for going be, it is certain they never come back with as good an opinion of their own physician as before setting out on their journey to the dispensary. After this there are coolness and estrangement in place of the old-time greeting and affectionate recognition, because the poisoned arrow of the so-called professor, his clinical chief, or one of his assistants, or several of them, has hit the mark and done its work in separating the practitioner and his patient.

There is not a special or general practitioner on Manhattan Island, or in the whole of Greater New York outside of clinical circles, and, for that matter, even high-grade men in those circles, who is not professionally and financially affected by the methods of shrewd and disreputable men who use them as a vehicle to carry themselves to prosperity. Specialists and practitioners alike, who are not in association with dispensary practice, have lost faith and caste, sometimes without knowing why, with patients old and new by the incisive, subtle and malignant meddling of some member of the staff of every clinic in the city—hospital, post-graduate, so-called schools of medicine and church clinics alike. The most outrageous and libellous accusations as to professional ability and character have been fired at men who have no connection with those medical and surgical charities by scoundrels from the ambush of the dispensary clinic for the sole purpose of private and personal gain, for which the aggrieved parties have no redress, since the rascals hide themselves behind social clubs facetiously called charity clinics.

To save the increment of good in those clinics and to protect them from their unscrupulous assistants there must be a house-cleaning and the guilty must be punished. The injury done to the general practitioner at the charity clinic by men interested only in themselves is a reproach to the many honorable medical specialists who give their talent and their time to the promotion of a good cause. Those gentlemen have it largely in their power to wipe out this reproach and should avail themselves of the earliest opportunity to do so. In the meantime, the general practitioners and specialists who have no connection with dispensary practice will take what means they see fit within the domain of medical etiquette to curb the cupidity and overreaching ambition of the mercenary clinician, always to be found diligently at work at the dispensary clinic.

It would not be extravagant, then, if the aggrieved parties, in view of the foregoing disclosures, should ask that an oath of fidelity to the trust imposed in them be subscribed to by the professor and his clinical assistants. All public men entering on responsible duties have to take such an oath, and what public functionary, pray, is more public than a physician and what calling is more responsible than his? The professor in every charity clinic should at once subscribe to such an oath, and, summoning his aids around him, should request them to do likewise. The oath we ask the learned clinical professor to take is fashioned thus:

McFiddle's Oath.

I, John McFiddle, am in perfect health and sound mind and fully realize the responsibility of the twofold obligation imposed upon me when I accepted the chair of the Institutes and Practice of Medicine and Medical Jurisprudence with which the trustees of the dispensary of the Mount of Olives Hospital saw fit to honor me; the one, my duty to the sick poor who throng the halls of my clinic, to serve them to the best of my poor ability; the other (not second in importance to it) is that relating to my medical brethren, whom I love, but who are not associated in any way with my or any other clinic, but, in lieu of which, are working hard in the various branches of an arduous profession in which they and I have a common interest.

I further declare on my honor that I will not by word or deed put any obstacle in the path of those, my toiling brothers, neither will I permit my chief of clinic, my lecturer, my instructor, nor any of my army of assistants, by hypnotic suggestions, or any other sly and adroit trick, to lead the patients who come to my dispensary away from it for the purpose of pocketing a fee for services supposedly rendered to sweet charity; neither will I permit any speak-easy game or bunco-steering around my clinic; for the patients who come to it come because they are presumed to have no money to fee private physicians. If they came on any other plea I should have to reject them as being unworthy of the benefits I hope to bestow on the poor who honor me with their humble patronage.

> Done under my hand and seal, at the City of New York, this twenty-sixth day of May, in the year of our Lord, 1902, by John McFiddle, Professor of Clinical Medicine and Medical Jurisprudence at the Mount of Olives Dispensary Clinic.

If, however, the professor and his assistants stiffen their necks and refuse to be bound by such obligation, a remedy for the oppression, and one that will bring consternation to the host of dispensary clinicians. can be found. The problem can be solved easily by drawing the lines closer and dividing the physicians who are and who are not in relation with dispensary practise into two hostile parties, when it will be the suppression of the clinic from lack of patronage, or the humiliating surrender of the practitioners to its dominant influence. This latter state can hardly occur, since there is not a ward in the city where half a dozen practical physicians and surgeons cannot be found as material wherewith to organize and operate a ward dispensary in opposition to the charity clinics. The necessary legislation for this could easily be procured. The ward dispensary thus organized would have many advantages not presented by the charity clinic as we see it to-day, with few of its disadvantages.

There is no car-fare spent in order to reach the new dispensary, its position being central and of easy access. No ten or fifteen cents for medicine; no standing around half the day waiting for one's turn, for the ward dispensary will be run in the interest of those for whom it is intended, namely, the sick poor, rather than in the interest of those who want to profit by the misfortune of others. As it is now, poor people hang around a dispensary clinic for hours, often in great bodily pain, in order to obtain a professional opinion from the young clinicians who crowd the dispensary, and which, when given, is probably worthless, as those competent to make a diagnosis see only about five per cent. of all who come.

Again, the ward clinic will be of immense benefit to those, even though sick, who are compelled to toil, since no half-day will be lost to them, because the practitioners' clinic will be arranged to suit their convenience. Still further, the professor and his chief of staff furnish about all the working capital of a dispensary clinic to-day; the others on the staff are supernumeraries, playing in small parts and in need of the prompter's aid every few minutes themselves.

In the new clinics organized in the wards of the boroughs for the benefit of the poor, every member of the company—the staff—will be a star, for he did not come to this clinic to learn a part, but to act one in a rôle he has played so often. The mutual help, suggestions and personal friendships of the members of this staff will have an influence for good on themselves as well as on the sick poor who will throng around them, and in a short time will put out of business the dispensary clinics, not only those gotten up by churches and interested individuals, but those established by millionaires to humor a whim, and where they dub the assistant physicians "medical clerks," and treat a member of the profession on business there with less courtesy than they do a dispensary patient.

Besides wiping out at a sweep half of the dispensary clinics, it will thin very materially the attendance at hospital and college clinics, thus giving the physicians who find employment there an opportunity to weigh their words when criticizing the manner in which a case was conducted by a physician not connected with the dispensary, and whom they do not know, in the hearing of the patient and perhaps of his or her friends.

The physicians on the staffs of these clinics will have time then to recollect that it is not medical etiquette to discuss the merits of a particular case with the patient or his friends, who, as a rule, will not hesitate to make false representations, and who, in nine cases out of ten, are not sufficiently intelligent to give a history of the case in a manner concrete enough to form a basis for the hospital physicians' snap diagnosis. Then, again, those dispensary physicians may not be conversant with the state of affairs that existed and which may have placed obstacles insurmountable in the path of the practitioner at the time this particular patient asked and received his professional aid. A weak and dilated heart was a hindrance to chloroform; or the lateness of the hour, the urgency of the case and the difficulty of obtaining assistance, made its termination anything but satisfactory to the operator, who must have had sand in him to cope with and survive the trying ordeal suddenly put upon him; but he did not escape entirely, for there was then sowed in him the seed of interstitial nephritis or endocarditis, destined to be his companion, however repugnant, until he closes his eyes forever and gathers the drapery of death around him.

The young dispensary clinician before he travels half way through his professional career, however brief that career may be, will learn that "Honesty is the best policy," and that "Do unto others as you would like to be done by" is the only rule of life worth following, as the law of equivalents and compensation, operative in the realm of conscious existence as in all matter, will hunt him down, search him and weigh him and lash him. He cannot escape the impartial intelligence that gives measure for measure; though he fly to the end of the earth it will reach out and overwhelm him.

Finally, he will be more unhappy than the poor practitioner, weighed down as he is with heart and kidney disease acquired by the hardships of his profession, of whom he spoke words of slander at the old dispensary clinic in order to increase his practice in his early professional endeavor.

51 Charlton Street.

THE LOCAL TREATMENT OF THE ORGANS.

BY BYRON COAKLEY, M.D.,
OF CHICAGO.

(Concluded from page 1181.)

Series VIII. shows the tremendous localized metabolism to be obtained from the injection into the organs of decinormal salt solution. The effect is the more pronounced the higher the temperature of the solution employed.

Series 8. A.

Brown spaniel, weight 34½ lbs. Blood-examination before experiment:

Whites, 6,900 { Poly. 66 per cent.
L. L. 12 per cent.
S. L. 10 per cent.
Myel. 12 per cent.
Reds, 5,200,000. Hemo. 96 per cent.

Opened abdomen and brought kidneys into sight and injected 1ʒ of the oil of turpentine into cortex of each kidney, making seven punctures in each organ. The bladder was immediately opened, washed out, urethra clamped and a wait of 20 minutes was made to give the organs a chance to throw the turpentine off, but no urine appeared. The animal was then given a high enema of 1 qt. of the decinormal NaCl sol. at 120° F. and rectum clamped. This was kept in bowel for 30 minutes, but no result was obtained. The dog was then infused through the external jugular, with 16 oz. of the decinormal NaCl at 120° F., and at expiration of one hour there was still no result; 12 oz. of blood were then withdrawn to allow high infusion; at the end of one hour there was still no activity of the kidneys. The dog was then infused with 16 oz. of the decinormal NaCl sol. (all the heart could take care of) and at the end of another hour the bladder was still free of urine. The kidneys were then each injected with 30 c.c. of the decinormal NaCl sol. at 120° F. and at the expiration of 10 minutes there was no activity; but within the next 10 minutes the bladder commenced to fill, and at the end of 20 minutes I had removed 16ʒ of urine from the bladder. The kidneys were later subjected to carbonic acid gas injections which again stopped the flow of urine, the kidneys turning black, this condition was relieved by continued parenchymatous injections of the saline solution.

Hematuria and albuminuria followed the last two experiments—the only ones in which I had noticed these conditions as the result of kidney experiments, but the CO_2 and turpentine had never before been used. Blood-count after CO_2 experiment:

Whites, 18,000 { Poly. 62 per cent.
L. L. 21 per cent.
S. L. 17 per cent.
Reds, 5,150,000. Hemo. 40 per cent.

Gain or loss after initial examination:

Whs { Loss — / Gain, 10,200 Reds { Loss — / Gain 250,000 Hemo. { Loss 51 per cent. / Gain —

The animal was infused every day for ten days, at the expiration of which time the blood-count was normal and the urine showed nothing indicative of renal irritation.

The experiments of Series IX. show conclusively that the injection of decinormal salt solution into the substance of the spleen will cause a higher red cell count in the splenic vein after injection than is found in the splenic artery before, showing that in some way these splenic injections increase metabolic activity in the spleen.

Series 9. A.

Great Dane, weight 80 lbs. Blood-count before experiment:

{ Whites, 7,800
{ Reds, 5,400,000 Hemo. 91 per cent.

The blood-count in the splenic artery and vein before the parenchymatous injection of 60 c.c. of the decinormal NaCl sol. at 120° F. was as follows: In the splenic artery the red cells numbered 558 to one white. In the splenic vein the red cells numbered 400 to one white. Ten minutes after injection the count showed: Red cells in artery, 571 to one white; red cells in vein, 600 to one white.

There was a preponderance of nucleated red cells in the vein and a few megaloblasts. The white count showed:

Before Injection { Poly. 68 per cent.
L. L. 20 per cent.
Myel. 12 per cent.

After Injection { Poly. 74 per cent.
L. L. 18 per cent.
S. L. 6 per cent.
Myel. 2 per cent.

The number of red cells in the splenic artery before injection was 558, after injection the splenic vein showed more red cells by 42 in actual number than entered the spleen and they (the venous reds) were principally of the nucleated variety. The increase in the vein of red cells after injection, was just 200. The myelocytes dropped from 12 to 2, the large lymphocytes from 20 to 18 and the small lymphocytes made their appearance.

The Lungs.—I advocate the local injection of the diseased area of lung in pneumonia, and depend upon the following therapeutic factors for beneficial results: (1) The localized posthemorrhagic leucocytosis secondary to needle puncture; (2) the general posthemorrhagic leucocytosis following blood-letting (the latter causing a concentration of the circulation in direct proportion to the amount of blood withdrawn); (3) a further localized leucocytosis due to the solution acting as a foreign body, thereby causing local irritation; (4) the high temperature of the solution injected causing a local hyperemia; (5) the blood-letting relieving the right heart of a part of its burden, at the same time preventing to a degree pulmonary congestion and suboxidation; (6) the blood-letting causing the formation of a red cell of higher oxidizing power as is shown by blood centrifuge; (7) the blood-letting acting as a direct means of toxic elimination; (8) the sodium's power to prevent hemoglobin displacement by excessive CO_2 in the general circulation (the affinity being greater for the sodium) and (9) the general stimulation to the organism, especially to the heart, which follows the infusion of the salt solution at high temperatures.

It is known that a high leucocyte-count is of paramount importance in the prognosis of this disease. It has been claimed by some that the injection of decinormal salt solution in the lungs would be productive of edema of those organs. The injection into the lungs of over a hundred dogs and in one case on the human subject (which I report in this paper) has shown that this fear has no basis. The Metchnikoff theory of leucocytes and phagocytosis is relied upon greatly in this treatment, and the work was approved by Prof. Metchnikoff himself after my Paris demonstration. I cite the following case which was successfully treated by the local method:

F., Swede, laborer, was taken with severe chill, great pain in left side; the pain was relieved by lying on the affected side. Respirations 40. Blood-streaked sputum. Temperature 105.2° F.; pulse 130, full and strong. Flatness on percussion as high as superior border of fifth rib on left side in mid-axillary line; diminished breathing on affected side. Breathing is of blowing character. Blood-examination: Reds, 5,200,000; hemoglobin, 92. Few nucleated cells. Sp. gr. 1,075.

Whites, 14,000	Poly.	82 per cent.
	Eosin.	1 per cent.
	L. L.	12 per cent.
	S. L.	5 per cent.

Diagnosis was lobar pneumonia.

Treatment.—The colon was flushed with two quarts of decinormal NaCl solution; patient bled 16 oz. Lower lobe of left lung injected with 8 oz. of decinormal NaCl solution, at 120° F. After the needle was once inside the pleural cavity, four distinct punctures were made in the diseased lung. Four oz. were left in pleural cavity. The patient was then infused through the cephalic vein 30 oz. Temperature 20 minutes after infusion was 106° and there were signs of delirium developing. In one hour the temperature was 101°, pulse 104, respiration 20. Patient suffered no ill-effects from the treatment that were noticeable. Blood-count three hours after infusion, injection and bleeding showed:

Whites 40,000	Poly.	90 per cent.
	L. L.	5 per cent.
	S. L.	5 per cent.
Reds, 3,300,000.	Hemo.	60 per cent.

The patient was again relieved of 8 oz. of blood on the tenth hour following lung injection and infused with 20 oz. NaCl solution at 110° F. The pulse at this time was 90, temperature 99°, respiration 20. I examined the lungs and thought I detected mucous râles in the consolidated area, but there was still a blowing during respiration, and this made it uncertain. At the end of twenty-four hours the patient was feeling better. The pulse was 104, temperature 100° F., respiration 22. Lungs were examined and large râles could be distinctly heard throughout the diseased area of lung. The patient was then bled 4 oz., infused 8 oz. every six hours during day for three days and the colon flushed morning and night with NaCl solution, 1 quart. During the next six days the patient was bled 6 oz. and infused 12 oz. morning and evening. He made a complete recovery and was back at his work at the end of three weeks. I introduced the needle between the fifth and sixth ribs in the mid-axillary line and directed it first downward and forward and then withdrew it and forced it upward and backward. I left the hot NaCl solution in the cavities much on the same principle by which the hot water-bag is applied to the abdomen. Dr. S. Lewaschew has the following to say about the latter method of treating the pleural cavity during thoracentesis:

"A sterilized sodium chloride solution introduced by gravity into the pleural cavity to take the place of the exudate during thoracentesis prevents marked fluctuations in intrathoracic pressure and promotes nearly a complete removal of the effusion. It not only does no harm to the inflamed pleura, if the proper precautions be taken, but seems to influence favorably the inflammatory process. Moreover, the operation is perfectly painless." In Lewaschew's[1] cases, after the procedure the inflammation gradually subsided and the greatly diluted exudate was completely absorbed. In nonsuppurative pleuritis, without exception, and in recent cases of suppurative form, no new effusion formed, one operation being sufficient. If the operation were performed after the subsidence of the acute symptoms, recovery rapidly proceded; if performed during the acute inflammatory stage and while the effusion was increasing, recovery was slower. In all cases a decided rise of temperature, with increased diuresis and pulmonary capacity and decided decrease in pectoral dulness shortly followed the operation. These symptoms were probably the effect of absorption on the highly diluted effusion.

The Liver.—The amount of metabolism in this organ is, as in the kidney, directly dependent upon blood-pressure. In the experiments of Series VI. we have shown how intra-organic injections in the liver increased the production of bile. The experiments show that after these injections five times as much bile was secreted in ten minutes as is secreted under normal conditions in one hour, and that a far greater metabolism can be obtained by this method than can possibly be hoped for from infusion, transfusion or rectal injections of the solution.

The Spleen.—The spleen can be treated locally with perfect safety. One need have no fear of hemorrhage, providing a very fine needle (the organotone) be used. It has long been considered a fact that in typhoid and other infectious diseases the primary destruction of the red blood-cells takes place in this organ. It seems rational to attempt to prevent this destruction by going directly to the organ and treating it locally. I have done this successfully, as can be seen in the case of typhoid which I report in this paper. The reduction of the organ in this case seems to be the direct result of the neutralization of a probably intensely destructive acid medium by the injection into its parenchyma of an alkaline solution. This solution in turn acts as a foreign body and in the effort which Nature makes to expel this irritant she relieves herself of the toxins. The elimination of the toxins prevents to a degree further degenerative changes in the splenic pulp, thereby protecting the red blood-cells.

I made several experiments similar to Experiment A of Series IX. and in each case I found a larger red cell-count in the splenic vein after injection than I found in the splenic artery before, embryonic cells being present in the vein after injection. The fact that red cell proliferation could be promoted in the healthy organ by these injections led me to believe that possibly they might prove beneficial in infectious diseases, in which there are considerable splenic tumefaction and red blood-cell destruction. The following case of typical typhoid will bear out my contention:

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[1] Deutsche med. Wochenschrift, Dec. 25, 1890.

Mrs. H., aged thirty years, complained for a week of pains in back, loss of appetite and headache. Patient went to bed on third day. I was called on the morning of the fifth day. Temperature was 102° F., pulse 110, abdomen tender. Patient slightly delirious; bowels constipated. The pulse became very rapid and at the end of the sixth day the temperature registered 104.2° F. Spleen was enlarged. Liver dulness extended below the tenth rib anteriorly. Rose-colored spots appeared on the seventh day. Widal reaction present. Typhoid diagnosis was made. The bowel was flushed every three hours with a pint of NaCl solution at 120° F. from the onset. Patient was also bled 4 oz. and infused 8 oz. every eight hours. The spleen was injected with 60 c.c. NaCl solution at 110° F. on the evening of the seventh day, after which the patient was bled 10 oz. and infused 16 oz. at 110° F. In two hours the temperature went down to 100.2°. Before splenic injection it was 103.4° F. and, as just stated, in two hours after it was 100.2° F., pulse 104. From this on to the tenth day the temperature varied between 100° and 105.4° F. and the pulse between 104 and 136. On the twelfth day the temperature went up to 106.2° F. and I was unable to lower it by such means as alternating hot and cold sponge baths, etc. As a last resort I injected 16 oz. of NaCl solution at 95° F. into the cephalic vein and in twenty minutes the temperature went down to 101.2° F. and the pulse to 108. This seemed to be the crisis of the disease, for from that time on the pulse, temperature, bowels, and general condition were kept entirely under control. The spleen was injected three times in all. Fourteen hours after the first injection the spleen was greatly reduced in size and the two injections that followed were all that were necessary to keep the organ down to a nearly normal size. The number of infusions and the amount of blood extracted were not kept count of. There were three blood-examinations made. The first showed reds, 4,800,000; whites, 6,000; hemoglobin, 82. The second, reds, 4,650,000; whites, 5,200; hemoglobin, 73. The third, reds, 4,200,000; whites, 18,000; hemoglobin, 78. This was a few minutes after the use of the cool infusion. The slight chloro-anemia was undoubtedly due to the blood-letting. Patient made good recovery. In all of my future typhoid cases I will inject the liver also and early in the disease.

Gigholi and Calvo report their results from the use of physiological salt solution in the treatment of typhoid fever. The amount given was 500 c.c. Eighteen cases were treated. Usually the temperature rose temporarily after the irrigation and subsequently fell to near normal, accompanied by slight general depression, some sweating and a noteworthy increase of urine. Others have seen nausea and vomiting, chilliness and mental excitement; but these the authors did not observe and they believe that such symptoms were avoided by using only 500 c.c. and introducing the fluid very slowly. The general conditions improved subsequently. The authors consider it a valuable treatment in many cases.[1]

W. M. Holliday[2] reports the use of decinormal salt solution in a severe case of typhoid fever with marked nervous symptoms. The nervous condition improved greatly within twenty-four hours and a repetition of the injections was followed by distinct general improvement.

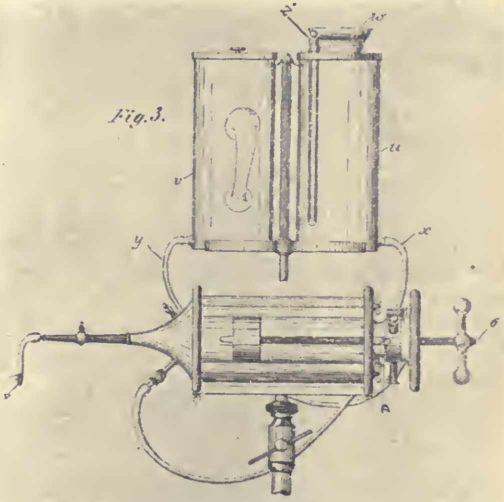
Fig. 3.

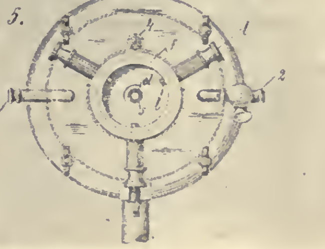
Fig. 5.

The Kidneys.—The metabolism of the kidney is in direct proportion to the blood-pressure in those organs. It has been shown by my experiments that this pressure can be artificially maintained by intra-organic injections and that the secretion of the organ is in direct proportion to the pressure exerted by the organometer and the temperature of the solution injected, the latter causing a greater or less hyperemia. These statements are confirmed by experiments of Series VII. The experiments show that after parenchymatous injections the kidneys secrete from eight to ten times as much urine in ten minutes as they had secreted during one hour under normal blood-pressure. These organs can be injected without hemorrhage.

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[1] Contributione clinico allo studio delle injezioni sottocutaneo d siero artificiale nella febra tifoidea, Florence, 1899.

[2] Phila. Med. Jour., Nov. 19, 1898.

The following cases of chloro-anemia were treated successfully by infusion and bleeding:

Mrs. J., aged thirty-five years. Occupation, scrub-woman.

Blood examination showed:

Whites, 17,000 Poly. 51 per cent.
L. L. 23 per cent.
S. L. 26 per cent.
Reds, 3,500,000. Hemo. 48 per cent.

The diagnosis was chloro-anemia. The symptoms were loss of appetite, headache, dizzy spells, chronic constipation, palpitation of heart; pulse full, but compressible.

The patient was bled 6 oz. every twenty-four hours for the first week and 12 oz. NaCl solution at 110° F. were injected into cephalic vein. At this time the blood-count was:

Whites, 20,000 Poly. 57 per cent.
L. L. 15 per cent.
S. L. 29 per cent.
Reds, 3,200,000. Hemo. 50 per cent.

The patient was then bled 6 oz. every twenty-four hours for the following week and immediately after bleeding, 12 oz. NaCl solution were injected into the circulation. At the end of the second week the red count was 4,100,000. Cells showed deeper color:

Whites, 16,500 Poly. 62 per cent.
L. L. 22 per cent.
Myel. 16 per cent.
Hemo. 69 per cent.

Patient complained of pain in left tibia and hot saline compresses were ordered. The pain disappeared three days later. The patient was now bled 8oz. and infused with 16 oz. NaCl sol. 110° F. each day for one week. At the end of the third week the symptoms had disappeared. The blood-count on the twenty-first day showed:

Whites, 8,200 Poly. 71 per cent,
L. L. 18 per cent,
S. L. 11 per cent.
Reds, 5 000.000. Hemo. 98 per cent.

At the end of six months the blood-count showed:

Whites, 9,000 Poly. 70 per cent.
L. L. 23 per cent.
S. L. 7 per cent.
Reds, 4,500,000. Hemo. 94 per cent.

Dr. Lepine cites the following results from intravenous injections in treatment of anemia. The case has many curious clinical features of progressive idiopathic anemia treated by saline injections. The patient was a country-girl who came to Lyons at the age of fourteen and who, under the combined influence of defective nourishment and confinement in an ill-ventilated room, became progressively anemic and weak. When admitted to the hospital she presented all the signs of severe chlorosis. The hemoglobin was reduced to one-sixth of the normal, the corpuscles not being reduced in proportion. The corpuscular value was estimated at 0.42 per cent. She became worse in spite of energetic treatment, including subcutaneous injections of citrate of iron and a generous diet. She lost weight and was attacked with generalized atrophic paralysis involving especially the extensors of the upper and lower limbs. Three months after admission it was decided to resort to infusion, the patient having continued to lose ground. A slightly alkalinized solution of soda chloride (7 grams to the liter) was employed. The operation was performed by Dr. True, the fluid being injected to the amount of 400 c.c. into the cephalic vein under a pressure of from 8 to 10 c.c. of water and at a temperature of 39° C. There were no ill-effects immediate or remote. On the contrary, the pulse increased in strength, appetite returned. She slowly continued to improve and a year later left Lyons for the country quite well. The paralysis also subsided. Lepine[1] thinks this is the first case of chronic anemia treated successfully by saline injection, and says that it illustrates the value of occasional energetic treatment in chronic diseases, a fact of which our predecessors were fully aware.

Miss L., occupation, laundress; nationality, Swede. Age, twenty-two years. Symptoms, headache, chronic constipation, and she complains greatly of lack of energy. Blood-count showed:

Whites, 15,000 Poly. 59 per cent.
L. L. 11 per cent.
S. L. 39 per cent.
Reds, 5,000,000, Hemo. 70.

Patient menstruating.

Patient was bled 6 oz. and infused 12 oz. every day for a week. At the end of first week hemoglobin showed an increase of 20 per cent. This treatment was continued and at the end of third week there were 12 oz. of blood withdrawn and 30 oz. of decinormal NaCl solution at 110° F. injected. The blood was examined next day and showed: Reds, 6,000,000, some nucleated; whites, 18,000; hemoglobin, 100 per cent. At the end of the fifth month the blood-count showed: Reds, 5,000.000; whites, 6,000. All objectionable symptoms had disappeared.

I have had marked success with infusion and bleeding in the treatment of diphtheria, scarlatina and measles.

The local treatment of the organs necessitates (1) the most absolute asepsis; (2) a positive knowledge of the temperature of the solution immediately before it enters the organs; (3) high and very even pressure back of the solution during injection; (4) protection against the admission of air; (5) a very fine needle with a protected lumen; (6) a positive knowledge of the amount of solution injected; (7) prevention against the admission of extraneous matter; (8) prevention against hemorrhage and hematoma formation; (9) protection against rupture of an organ or of its capsule; (10) absolute knowledge as to whether the organ is absorbing the solution as rapidly as it is being injected.

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[1] Lyons Méd., 1886, No. 30.

All of these precautions and many more of minor importance have received the most careful thought and consideration, and to overcome all obstacles pointing toward successful intraorganic and intravenous treatment I invented three instruments, viz., the organometer, the organotome, and the phlebotome.

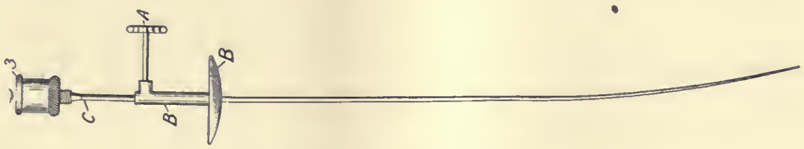

Fig. 7. The organotome.

The organometer is represented by drawings, Figs. 1, 2, 3, 4, 5, and 6. Fig. 1 shows a side view of the main part of the apparatus, Fig. 2 a longitudinal section of the same. Fig. 3 gives a full view and Figs. 4, 5, and 6 represent details of the construction.

In the glass cylinder (*a*, Figs. 1 and 2) works a piston (*c*, Fig. 1) which by split bolts (*b*, Fig. 2) may by turning the handle (*n*, Figs. 1 and 2) to the left be pressed asunder till the asbestos packing in the plunger is pressed sufficiently close against the sides of the cylinder to prevent backward escape of the fluid during injection. The piston rod receives its guidance exclusively from the piston itself, it is threaded for its whole length and inserted in a hand wheel (*G*, Fig. 1). The piston rod must be connected loosely with this wheel when the instrument is to be used for infusion, transfusion, enemata, rectal feeding or as a stomach-pump, or the wheel (*G*, Fig. 1) may act as a crank hanger after having been prevented from driving up or down by the insertion of pins (*L*, Figs. 1 and 2) controlled by springs (*K*, Fig. 2) in the wheel slot (*I*, Fig. 2). If the pins (*L*, Figs. 1 and 2) be turned in such a manner as to follow the springs (*K*, Fig. 2) they fasten into the slot (*i*, Fig. 2) and any change of the distance between the wheel (*G*, Fig. 2) and the base (*F* Fig. 2) becomes impossible. Having established this coupling between the base *F* and the wheel *G*, one immediately possesses absolute control over the pressure of the solution to be injected. The control of power is so absolute that the solution could, if necessary, be injected one drop at a time. The inner cylinder holds exactly one pint. When the wheel *G* is coupled by the pin *L* to the base *F* the instrument is ready for intraorganic work and by the withdrawal of the pins *L*, which are held in place by small cross-bars, and the turning back of the wheel *G* toward handle *N*, the instrument is ready for such work as infusing, transfusing, etc. It is possible by using high pressure in the inner cylinder *A* to give a one pint enema in one minute.

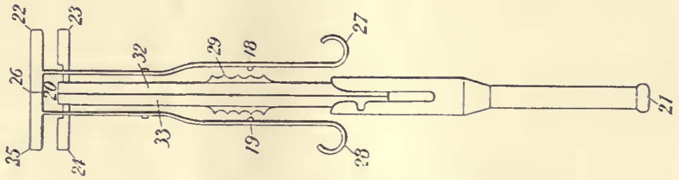

Fig. 8. The phlebotome, disconnected.

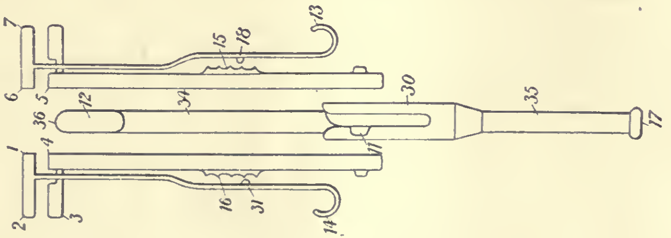

Fig. 9. The phlebotome ready for use.

The inner glass cylinder *a* has three openings *O*, *P* and *T* (Figs. 1 and 2), each of which is provided with a valve or cock. When the instrument is thrown back by use of compound joint 10-12 (Fig. 1) and ball-and-socket joint 16 (Fig. 1) any air that the inner cylinder may contain escapes through valve *P* (Figs. 1 and 2). Valve *P* is left open while the inner cylinder is filling. By use of valve, *T* the outlet to the instrument may be shut off. Valve *O* contains a very fine sieve through which the solution must pass before entering the inner cylinder. A glass jar of 3,000 c.c. capacity (*U*, Fig. 3) is fitted with a cover (*w*, Fig. 3) which contains two very fine sieves; the hose (*X*, Fig. 3) is attached to an opening at the bottom of the jar *u*, also to cook *O* leading to the inner cylinder. To *Y* a glass jar of 3,000 c.c. capacity (*V*, Fig. 3) a hose is attached; this hose leads to a cock opposite and corresponding to cock *a* (Fig. 3).

The instrument and solution are first thoroughly sterilized by boiling; then the sterile solution is poured through double sieves *w* (Fig. 3) into jar *u* (Fig 3) from which it passes through hose *X* (Fig. 3) and cock *O* (Fig. 2), the latter having a fine sieve in its lumen, into the inner cylinder. Jar *V* (Fig. 3) contains boiling water which passes through hose *Y* and a cock opposite and corresponding to cock *a* (Fig. 3); this water after circulating around the inner cylinder passes out of the instrument through a hose attached to cock *a* (Fig. 3), the lower end of the latter hose being placed in a sterile receptacle. This circulation of boiling water is maintained while the solution is being injected, thereby securing an even temperature of the solution in the inner cylinder up to the time it reaches the circulating hose *B, C, D*, (Fig. 3). This hose is composed of a middle section with heavy walls and two outer sections with lighter walls; the former section contains the solution to be injected, while the outer contain a circulation of boiling water obtained from the outer or circulating cylinder. This boiling water circulates to the point of needle attachment, a thermometer at this point registering the temperature of the solution. To prevent the too-rapid injection of fluid in an organ, a small glass bulb is connected with the hose at the point of needle attachment and should there be the slightest tendency toward excessive pressure in an organ the bulb will immediately fill; this bulb will also fill if there be any obstruction in the needle.

In order strictly to control the amount of fluid passing through the needle, a counting contrivance (4, Fig. 1 and Fig 6) is connected with wheel *G*. Every full turn of the wheel registers an output of 2 c.c. of the solution. To have close control of the temperature of the solution, the spindle (*d*) serving as piston rod is hollow and contains a thermometer (5, Fig. 1). With the help of a threaded thermometer head (6) one may, after unfastening the threading, take out the thermometer at any time and so ascertain the temperature of the solution. The mercury of this thermometer (9, Fig. 2) projects forward into the solution for half an inch and is protected by a very thin silver covering.

The thermometer (*Z*) in jar (*U*) registers the temperature of the solution before entering the inner cylinder (*a* Fig. 1) and as before stated the hose *B, C, D* has a thermometer which registers the temperature of the solution in section *C* at the point of needle attachment.

Fig. 5 shows the pins (*L, L*) as they appear when the wheel (*G*) is coupled to base *F*.

Fig. 4 represents the coupling between compound joint 10, 11, 12 (Fig. 1) and base attachment 13 (Fig. 1). The instrument can be attached to the side of a bed or can be placed upon a table standard. The instrument weighs about 80 lbs. and is inclosed in a leather bound case when not in use, and can be carried as one would carry a satchel.

The organotome (Fig. 7) is an 18k gold needle five inches in length, tapering from base *C* to point *D*. This instrument is very much finer than the finest hypodermic needle and can be thrust into any of the organs without causing hemorrhage. The needle is supported by a shield cuff *B-B* half an inch in length. At one end of the cuff set screw *a* is inserted which enables the operator to set the instrument for any depth of puncture he may care to make. The irrigating hose is attached at point *E*; the diameter at base *C* is $^1/_{48}$ of an inch, the needle gradually tapering to point *D* which is $^1/_{96}$ of an inch.

The phlebotome is an instrument used for infusing and blood-letting. Fig. 8 shows the instrument disconnected and Fig. 9 shows the instrument as it appears when in a vessel ready for use.

Technic.—After the parts have been rendered aseptic a small incision is made over a vein; the vein is brought to the surface; two temporary silk ligatures are thrown around the vessel one inch apart and drawn sufficiently tight to prevent hemorrhage; a small V-shaped piece is excised from the external lateral wall of the vessel between the ligatures; parts 7-8 and 2-3 (Fig. 8) are brought together by pulling downward on levers 13-14; they are then inserted (points 7-8 and 2-3) in the vessel, one at a time; after they are in place the walls (32-33-Fig. 9) coapt, forming a lumen into which a tube (34-Fig. 8) is inserted; the tube has a cuff (30-Fig. 8) and by turning this cuff to the right a groove (11-Fig. 8) turns on pins (9-10 Fig. 8) of 32-33 (Fig. 9) connecting the instrument; levers 27-28 (Fig. 9) are pushed upward until the lumen of the vessel is enlarged sufficiently to allow a free flow of blood; the levers are held in place by catches 18-31 (Fig. 8) slipping into grooves 15-16 (Fig. 8); cuff 30 (Fig. 8) is then turned to the left and tube is forced upward until the opening (12-Fig. 8) fills space 20 (Fig. 9). For blood-letting the open side of tube is turned toward periphery, the blind side preventing the admission of air to the vessel. The lower ligature is removed and blood will flow through tube and out of opening 17 (Fig. 8) into a graduated vessel until the desired amount has been withdrawn; the tube is then drawn downward about an inch, turned to the left until the blind side faces the periphery and the open side the direction of the blood current; the tube is pushed upward until space 20 (Fig. 9) is filled by opening in tube, the blind side preventing further bleeding by filling space between 5-6 (Fig. 8). The circulating hose attached to the organameter is connected with the phlebotome at point 35 (Fig. 8), the last ligature is then removed from vessel and solution forced through opening 12 (Fig. 8) into circulation. After infusion the hose is disconnected, tube withdrawn until point 36 (Fig. 8) is on a level with points 4-5 (Fig. 8); the cuff is turned on catches 9-10 (Fig. 8) and the levers 13-14 (Fig. 8) are drawn downward until points 2-3 and 7-8 (Fig. 8) meet; the instrument is left in vessel and the blood allowed to course on through the lumen formed by bringing points 2-3 and 7-8 together. The instrument can be left in vessel for hours and the circulation tapped at will. The instrument is made of silver and heavily plated with gold.

I feel deeply indebted to the following gentlemen for the many courtesies extended to me during my experiments and demonstrations, and take this means of extending to them my heartiest appreciation: In Chicago, Professor W. A. Evans, Professor J. A. Wesener, Dr. C. G. Roehr, Dr. F. C. Green, Mr. Charles Truax and Mr. W. F. Butler.

In Berlin: Professor Renvers, Professor Rudolph Virchow and Dr. Bloch.

In Vienna: Professor Nothnagel, Professor Beattle, Professor Burgmeister and Dr. Kolish.

In Paris: Professor F. Raymond, Professor J. Charcot, Professor Hallion, Professor E. Metchnikoff and Dr. C. Comte; and in London, Professor Starling.

THE CAUSES AND MANNER OF DEATH IN EPILEPSY.

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Aside from the scientific interest that attaches to the study of the causes and manner of death in epilepsy, there is one of practical value involving the possible saving of life under certain circumstances in some cases. Our experience has been such that we feel justified in stating that epilepsy should not be regarded as a relatively harmless disease so far as life is concerned, for as a matter of fact *any epileptic may die suddenly at any time.*

The manner and causes of death in epilepsy may be summarized as follows: (1) It may occur suddenly in any case as the result of a single seizure; (2) it may result from a series of seizures occurring in rapid succession and ending in status epilepticus; (3) it may result from an accident suffered because of a fit; (4) it may result from all other causes that ordinarily produce it, with a seeming preponderance in favor of diseases of the heart and lungs.

As to the first, sudden deaths occurring as the result of single fits are not very common, representing somewhere between 3 per cent. and 5 per cent. of the total number. In a series of 190 deaths occurring at the Ohio Hospital for Epileptics during several years, five of them, approximately 2½ per cent. of the total, were reported as having been due to a single fit, while similar cases have come under my own observation in a total of 95 deaths that occurred at the Colony in six years. The circumstances surrounding one case at the Colony were rather extraordinary in that death occurred while the patient was standing upright. The patient, a young woman, went to the faucet for a glass of water, and, evidently feeling an attack coming on, placed both hands on the top of the marble wash-basin for support. Apparently the violence and duration of muscular contractions about the thorax and neck were great enough and lasted long enough to produce asphyxiation, and the patient died in the position described. The upper portion of the body, neck and face bore the characteristic evidences of death from suffocation, and so rigid were the contractions that the body remained standing, fixed in the attitude in which death occurred for some minutes before it was placed on the floor.

In the second class of cases, in which death is due to status epilepticus—a condition rightly to be considered as the bane of every epileptic's existence—the number runs up to 23 per cent. of the total. Practically, status epilepticus causes the death of one epileptic out of every four who die. Serial attacks in themselves rarely lead to a fatal issue, although they may in any case pass into status and lead to a fatal issue in that way, and it is in successfully combating the development of status that the physician can sometimes save life.

As a rule, status should be feared when more than three or four well-marked and distinct attacks occur within an hour's time; and the most vigorous treatment to prevent status should be instituted at once. Status develops wholly irrespective of the type of epilepsy from which the individual suffers, whether it be grand mal, petit mal, psychic or Jacksonian, or any combination of these, and there is reason for believing that some cases develop what might be termed "masked status," a condition characterized by a few light convulsive attacks, mostly psychic or petit mal in character, and followed by excessive temperature elevation, the fever often running up to 106 or 107° F., and by a more or less prolonged period of unconsciousness, followed by death. A case illustrative of this recently came under my notice. M. W., a woman of thirty-four years, was admitted to the Colony on December 18, 1901. It was stated that she had been an epileptic for two years only. She showed no fixed impairment of any of the faculties of the mind, was entirely free from any of the so-called stigmata of degeneration, did not possess the "facies epileptica" in the slightest degree, nor, in short, was there anything about her apparent on inspection in any way indicative of epilepsy, and yet, symptomatically, she presented a typical picture of having epilepsy in a composite form.

In five weeks' time she had forty-eight petit mal, fourteen psychic and eight grand mal seizures, each fit being typically distinctive of its class. Soon after midnight on January 23d, she complained of intense pain in the lower and back part of the head, which a simple remedy seemed to relieve so that she rested quietly the remainder of the night. At ten o'clock the next morning she had two psychic seizures close together and soon after became unconscious, remaining so until death occurred through respiratory failure three and one-half hours later. The autopsy showed a marked increase in the amount of cerebrospinal fluid; a deep engorgement of all blood-vessels exposed to view, and particularly of those at the base of the brain; an attachment of the pia-arachnoid over the vortex to the brain substance, so intimate as to tear away some brain tissue when the membranes were stripped off; and a tumor at the inferior and inner side of the temporosphenoidal lobe, 2x3 inches in size, jelly-like in consistence. (Pathologically the tumor has not yet been examined, but the mere fact of its presence in this connection is sufficient.)

Idiopathic epilepsy with a favorable prognosis as far as life was concerned might easily have been the diagnosis in this case, since there was absolutely no evidence of the presence of a tumor in the brain, nor were there any symptoms of any kind save the three types of convulsions; just as a similar prognosis might have been given in another case that came under my observation in 1898, in which a young woman had 519 separate and distinct grand mal seizures in forty-nine and one-half hours, and in which the autopsy showed absolutely nothing abnormal in the brain, although the initial spasm 519 times in succession had been the contraction of the first joint of the right thumb. Numerous microscopical sections from the right thumb center in the brain showed the same condition of vacuolation that we would expect to find as the result of exhaustion or extreme fatigue.

I mention these two diametrically opposite cases, as far as causes are concerned, to show how completely concealed may be the real cause of the disease and how any cause may apparently at any time suddenly leap into fatal activity and terminate life in a very short while.

Some diseases are characterized in lay terms as "striking in," and the same anomaly is sometimes observed in certain epileptic phenomena in which the convlsive force seems to expend itself almost entirely in the central nervous system and to affect the muscular apparatus of the body either not at all, or only in the way of producing fine, fibrillary tremors, chiefly confined to the finer muscles of expression about the mouth.

Under the third heading, that of death from accidents, about one-half as many epileptics die from such causes as from status epilepticus. It is literally true of the epileptic that always in life he is "in the midst of death." At no time is he free from liability to accident, and the one period of his greatest danger comes when he is asleep.

Some twelve years ago, while I was serving as an assistant physician in a large State hospital for the insane in which more than 100 epileptics were confined, three epileptics were found dead in bed one night. It requires only from one to five minutes for an epileptic to have a severe convulsion, and less than five minutes more for him to die from suffocation by rolling over and burying his face in the pillow or in the bed-clothes. In a record kept at the Colony in one hundred cases in which the attacks were chiefly nocturnal, it was found that 13 per cent. of them always rolled or were bent over on their faces by the force of the convulsion, and many of them would unquestionably have perished through asphyxiation had they not received prompt attention from the nurse in charge. It was also noted that the force of the convulsion spent itself in the same direction each time; that is, the patient, when in convulsion, was always turned to the right or to the left, as the case may be, indicating the permanency in location of the seat of the convulsive discharge.

Efforts have been made to perfect a woven wire pillow and a breathing mask for epileptics' use when sleeping, but so far without satisfactory results. Epileptics should sleep on a hard, flat hair pillow, or, better still, on none at all; and as far as possible they should be under some supervision while they are asleep. But in spite of any precautions that it is possible to take for their safety at such a time, accidental deaths are bound to occur.

In the fourth class, in which death is due to a variety of causes, but in which diseases of the heart and lungs predominate, we note that in 95 deaths occurring at the Colony tuberculosis was the cause in 24 per cent., and that organic heart diseases produced death in 10 per cent. of all cases studied.

At the Ohio Hospital for Epileptics 42 deaths out of 190 were recorded as due to diseases of the lungs, either in the form of tuberculosis or pneumonia, making a total of 22 per cent. of the entire number.

According to the New York State Commissioner of Health, there were 129,257 deaths in the State from all causes during the year 1901. Of this number 13,766, or 9⅗ per cent., died from pulmonary tuberculosis. In the same State during the year 1900 there were 128,468 deaths, 13,590, or substantially 10 per cent. of them, being due to pulmonary tuberculosis. It would appear from this that the number of epileptics who die from lung diseases is twice as great as the number of non-epileptics who die from the same cause.

From the foregoing, based on a study of 220 deaths among epileptics, we might state the causes and manner of death in this disease to be approximately as follows: Out of every 100 epileptics who die about 4 do so as the result of a single fit; about 24 as the result of status epilepticus; about 12 as the result of some accident, including suffocation in bed; about 24 as the result of some disease of the lungs, chiefly tuberculosis; about 10 as the result of some organic disease of the heart; and about 26 from all other causes.

For data in the foregoing, I am indebted to Dr. Daniel Lewis, New York State Commissioner of Health; Dr. Everett Flood, Superintendent of the Massachusetts Hospital for Epileptics at Palmer; and to Drs. Foshay, Coleman and Ohlmacker, manager, superintendent and pathologist, respectively, of the Ohio Hospital for Epileptics, at Gallipolis.

GENERAL ENTEROPTOSIS.[1]

BY ROBERT T. MORRIS, M.D.,
OF NEW YORK;
PROFESSOR OF SURGERY AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL.

THE term "general enteroptosis" is not comprehensive, but it describes part of a group of events and may be used for classifying the rather common cases which are marked by relaxation of the peritoneal supports of the viscera.

The chain of causes and phenomena may perhaps be arranged in the following order. A young woman wears a snug corset. This is a splint. Under splints muscles generally become atrophic in other parts of the body and it is fair to assume that the abdominal muscles are not different from other muscles in this respect. If the corset engages the lower rib line and prevents the liver from sliding over the right kidney as it should in normal respiratory movements, the liver has a range like the piston of a pump and it crowds the right kidney away from its loose anchorage. For surgical description, then, such corsets may be classified as splint corsets and pump corsets.

The chief damage caused by the pump feature would seem to be the production of a loose kidney. The damage caused by the splint is apparently shown in abdominal muscles which have been supported artificially until they have lost much of their natural strength. When parturition occurs such muscles are apt to pull apart along the line of the linea alba and they fail to regain a proper degree of innervation. The muscular diastasis is liable to increase after the patient is up and about, and we shall find on examination of many women with loose abdominal walls that the rectus abdominis muscles seized in two hands can easily be drawn apart for a distance of several inches. The intervening structures of the linea alba become broadened out and thinned, and the abdominal wall fails to act as one of the chief supporters of abdominal viscera. The hollow viscera then cease to do their part of the work of supporting the liver and this viscus begins to descend. Its suspensory and falciform ligaments become elongated. The vena cava inferior is deeply lodged in a part of the substance of the liver, and at this point it receives the hepatic veins. The liver fixed at the vena cava descends through the curve of axis rotation by which it ascended in fetal life. The duodenum, pylorus and hepatic flexure of the colon have to go with it. The axial rotation of the liver brings the posterior lower border of the liver against the upper pole of the right kidney, and if this viscus has not already been pushed loose, it now becomes loosened by the impact of the liver. When the hepatic flexure of the colon descends it is followed by the transverse colon. This pulls upon the gastrocolic ligament and causes angulation of bowel and interrupted peristalsis. The large branches of the solar plexus from the liver, kidney, and bowel are irritated, so that in addition to the mechanical disturbances of the viscera a train of reflex disturbances of the sympathetic system add to the patient's distress and we have various functional derangements of the viscera.

Most of the women suffering from general enteroptosis are invalids to a moderate degree. They are never quite well and yet are not ill enough to welcome the proposition of a surgical operation for their relief. Palliative treatment can accomplish a great deal for them. Among the resources to be applied is first the corset that was originally responsible for the trouble. It is too late to dispense with it, and we put it to use by applying it snugly while the patient is in a recumbent position, and after the liver and kidney have been replaced as well as possible. The corset aids the abdominal muscles to support the hollow viscera and these in turn support the liver and kidney, or kidneys. If the corset be so applied that it supports the hollow viscera well,, the patient usually loses the discomfort caused by "afternoon bloating." The bloating seems to be due primarily, not to gas distention, but to a tiring out of the mesenteries and suspensory ligaments, which remain contracted for a few hours after the patient is out of bed in the morning, and then lose their contractibility in part in the afternoon, thus allowing the viscera to sag. The sagging hollow viscera may or may not later become distended with gas, but the patient describes the condition as "afternoon bloating." The dyspepsia that results from the angulation of the pylorus and the drag of the gastro-colic ligament is apt to be marked by fermentative features and is relieved by stomach lavage. In applying this treatment to women several refinements of technic give advantage. It is well to allow the patient to wash the stomach-tube herself. Women are suspicious of anything that has been washed by a man. It is well to have the stomach-tube brought to the patient on a clean white platter. The lubricant should be good sweet oil flavored with oil of wintergreen. This makes the tube taste so good that after a little preliminary chewing it is swallowed with something more akin to avidity than we are apt to observe in work with the stomach-tube. If the fauces still rebel, a preliminary spraying with cocaine helps matters materially.

Abdominal massage and electricity properly and persistently applied will make the abdominal muscles develop, and will stimulate the functions of the abdominal viscera to such an extent that many an enteroptosis patient can be relieved of most of her invalidism. I do not do any of the palliative work nowadays myself, but refer the patients to physicians who are painstaking in attention to the requirements. My treatment is only for those patients who do not obtain satisfactory results from palliative measures.

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[1] Read before the Association of Alumni of Bellevue Hospital, April 2, 1902.

In operative work I make a very long abdominal incision, sufficient to permit repair of the diastasis of the abdominal muscles. Webster of Chicago does not open the peritoneal cavity in his diastasis operation, but exposes the margins of the separated muscles, and then sutures them together over the infolded peritoneum and transversalis fascia. It seems to me that we should look at this infolded peritoneum as an invitation to the production of ventral hernia, and many of these patients have umbilical hernia anyway, so it has been my practice to cut out all of the elongated tissues lying between the separated muscles. In one case the strip removed measured seven inches long with an average width of nearly three inches. The peritoneum and the muscle sheaths are sutured in normal position when the diastasis is repaired, but an important preliminary step consists in shortening the ligaments of the liver. The falciform and suspensory ligaments are scarified, and then gathered up short in an "S" form with very strong chromicized catgut or silk. In addition I sometimes pass the cirrhosis brush over the diaphragm and adjacent liver surface, so that the removal of endothelium will result in adhesions. Patients bear the operation remarkably well, and yet it always looks so formidable to me that I have not done the additional operation for loose kidney at the same sitting until recently, when I did it in two cases in which the patients were in fine condition after completion of the work upon the muscles and liver. I have been tempted to gather up the lax gastro-hepatic omentum in some of these cases, but there is a great amount of important anatomy just in that locality and it has seemed better to trust to the other resources. The enteroptosis operation should be done rapidly if one is to avoid shock, and all of the work, with the exception of the suturing of the skin and muscle sheaths, should be completed in ten minutes from the time of beginning the operation.

MEDICAL PROGRESS.

NEUROLOGY AND PSYCHIATRY.

Phototherapy and Neurasthenia.—The important modifications which one notes in the nervous system following the use of colored rays of light or of decomposed light induced P. Joire (La Sem. Méd., 1902, No. 17) to employ phototherapy in treating neurasthenic troubles. According to the experience of this observer, the red rays are especially recommended for this purpose, not only because of sedative effects which they appear to produce upon the nervous system, but also because of their considerable power of penetration and of regulation exercised upon the blood circulation. The treatment by red light is particularly efficacious in cases of hyperesthesia, which constitutes, as is well known, the point of departure for most of the characteristic symptoms of neurasthenia, such as headache, vertigo, pain in the back, etc. In cases in which one sees, after the disappearance of painful signs, a certain degree of cerebral depression, it will be well to employ other light cures, and to make, according to the state of the patient, a variation of color and intensity and manner of application. The calming action of phototherapy, and especially of exposure to red rays, seems also to have the power of increasing the strength of the patient, augmenting the appetite, regulating digestion and governing general nutrition. In spite of their great susceptibility, neurasthenics undergo without difficulty treatment with red light, perhaps because the vibrations of this color are comparatively slow.

THERAPEUTICS.

Dormiol in Epilepsy.—In eleven cases of status epilepticus J. Hoppe (Münch. med. Woch., Apr. 29, 1902) has used dormiol and has found that, so far as efficiency is concerned, it ranks equally with amylene and has no after-effects. The administration was per rectum in the form of two or three tablespoonfuls of a stock solution, 10 to 150, in from ¼ to ⅓ liter of water. For continued use in epilepsy, dormiol is no more suited than is chloral or amylene, except, perhaps, in certain cases of epilepsia nocturna. In cases of epileptic confusion, with motor restlessness, it failed completely.

Pertussin in Whooping-Cough.—The treatment of whooping-cough has ever been one of the most discouraging chapters of medicine; almost all the antispasmotics have been tried and with but little success. H. Barasch (Medicin. Blaetter, Apr. 24, 1902) has employed pertussin, the saccharated extract of thyme, in thirty-eight cases varying from four months to three years of age. The dose employed was two teaspoonfuls to one tablespoonful every three hours. In only fourteen cases was an improvement noticed and in but ten was the duration of the disease diminished. A real specific thus still remains to be found; however, pertussin may be valuable in those cases which do not react to the other remedies. As before, the chief measure in combating the disease must lie in a proper prophylaxis.

Iodides in Arteriosclerosis.—The power of the iodides to absorb sclerotic portions of the arterial walls is not believed in by D. Jodlbauer (Münch. med. Woch., Apr. 22, 1902). He thinks that a distinct dilatation of the arterioles is brought about, whereby the circulation is improved, the heart relieved and the heart-wall better nourished. There is sufficient experimental proof that sclerotic arteries are capable of dilatation, and the rapid action of iodides so often noticed, which finds no explanation in the absorption theory, would thus be best cleared up.

Syncope and Antidiphtheritic Serum.—It is a well-established fact that antidiphtheritic serum has not only a beneficent, but at times a malign effect which occasionally assumes alarming proportions and usually consists in local or general edema, erythema, suppuration, etc. These untoward signs which may also involve affections of the heart usually appear late, namely, a day or two after the injection, or even during the second week. A. Sommers (La Sem. Méd., Apl. 30, 1902) reports an experience in which two applications of the serum were each followed after two hours by severe cardiac syncope which lasted about half an hour. The repetition of this phenomenon in the same patient with the same signs and after the lapse of the same time make it appear more than a mere coincidence. This case resembles two reported recently by A. M. Saward (London), sisters, each suffering from malignant diphtheria. One died of cardiac failure a few hours after the first injection of serum and the other had a cardiac collapse and it was a very difficult matter to prevent death.

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Subscription Price, including postage in U. S. and Canada

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LEA BROTHERS & CO.,
No. 111 FIFTH AVENUE (corner of 18th St.). NEW YORK.

SATURDAY, JUNE 28, 1902.

THE CHOLERA IN THE PHILIPPINES.

RECENT reports from the Philippine Islands show that cholera is raging with terrible virulence in the Archipelago. Up to the beginning of the present week over 8,000 cases of the disease had occurred with about 5,500 deaths. Of these about 1,500 cases with 1,200 deaths had occurred in Manila alone. Up to date, however, less than 100 American soldiers have died of the disease. Only about fifty of these deaths have occurred during the past two months, the others being scattered over a much longer period. The approach of hot weather makes the condition of affairs somewhat serious, but there is every reason to think that the military and civil sanitary commissions will be able to cope with the situation.

There have been other serious pathological dangers threatening the Philippines since the American occupation, yet all of them have yielded to the rigid enforcement of the proper sanitary precautions. Shortly after the Americans assumed charge of Philippine affairs, smallpox broke out and threatened to prove a serious additional complication in an already quite sufficiently involved situation. Prompt action by enforced vaccination soon dispelled the danger and gave the first index of what the Americans were going to accomplish for the Philippines. Then the bubonic plague became a threatening factor in Philippine affairs, but though the other places in the East once invaded have not succeeded in stamping it out, the disease was brought under control very soon by the American sanitarians and ceased to give cause for fear. In fact the declaration made by Maj.-Gen. Wheaton, on his landing at San Francisco on Sunday last, sums up the situation very well: "The war has cost many lives, and the loss among the natives has no doubt been large, but, when one takes into account the hundreds of thousands of lives that have been saved by reason of the sanitary precautions put in force by the American civil and military authorities, the loss by the war seems infinitesimal. It is perhaps no exaggeration to say that full half a million of lives have been saved by the presence of the Americans in the Philippines."

All this gives good grounds for the hope that the present epidemic, despite the extent to which it has spread, will not prove as serious as it seems to threaten. Cholera we know to be a disease that can be stamped out by quarantine regulations properly enforced, so that we have every confidence that the disease will not get beyond control. There is of course need of the most stringent precautions at all ports of entry having any communication with the Philippines, lest the disease should gain an entrance into this country. The distance, however, gives good assurance that the disease will not slip in unnoticed, since the incubation period of the disease will be long past before a landing is made. While the situation will be watched with interest by all in order to note the results of American methods, there is no need for the alarm that has been expressed by some. The civil and military commissions can be depended on to keep the matter well in hand.

THE STEGOMYIA FASCIATA.

IT seems that the United States in its evacuation of Cuba has left behind it an army medical commission, properly provided and equipped to carry on the experiments that have already, to a great degree, revolutionized the theory of propagation of yellow fever. Added to this, the Marine Hospital Service has despatched a working party to Vera Cruz to continue the study, not only of yellow fever but also of malaria, dengue and other diseases common to the United States and Mexico. This, it strikes us, is a most important matter and one which is well worth the necessary expenditure of both time and money.

According to a report of the Army Commission operating in Cuba, not only is it shown that the mosquito carries yellow fever, but the claim is made that it is the sole means by which the disease is conveyed to man, and that it is a particular species of mosquito only, the Stegomyia fasciata, which thus transmits it, though they state in their conclusions that the original cause of the disease itself is unknown. This summing up, however, seems to be rather of the nature of a Scotch verdict—not proven. That the mosquito does convey the yellow-fever infection, according to the theory of Finlay, appears to be satisfactorily established, but that it is the only agent in its transmission may be still open to argument. Nor does it appear that the Stegomyia fasciata has been fully convicted of being the guilty mosquito, as he does not seem to have an absolute prototype among the sixty odd species inhabiting Europe. Even though it should be found that the American mosquito does not correspond to any member of the foreign family, it is still possible that one of a different variety may perform the office of spreading the contagion. All this can be settled only by further experimentation on the same lines already pursued by the commissions engaged in them. That this is an imperative necessity, not only for the health of cities, but for the general interests of commerce and the comfort of the traveling public can be seen at a glance, for then the efforts of the quarantine officers will be directed against any possible lurking mosquitoes in vessels and cargoes arriving from infected ports, and the dominant question to be determined will be, "How far can a mosquito be transported in baggage?" Since demands have already been made at the Bureau of the Supervising Surgeon-General, to modify the quarantine regulations for the present season, based on the findings of the Army Board regarding the mosquito, a series of most painstaking investigations have been undertaken by the workers of the Marine-Hospital Service to settle this point. Their opinion is that, while it is possible that mosquitoes could enter baggage and remain alive for a time sufficient to be carried from our southern cities, practically this does not happen, and that the contagion is spread by the bite of a native insect from an imported case of fever, so that without the actual neighboring presence of the disease, either as an epidemic or a sporadic case, we may rest in comparative peace, even if the voice of the entire sixty varieties, like that of the turtle, is loud in the land.

THE CAMBRIDGE SMALLPOX EPIDEMIC.

THE news from Cambridge, Mass., shows that a very serious epidemic of smallpox is raging in the town. The schools have been closed, all places of amusement shut up, and even an open-air bicycle tournament has by request of the Mayor been postponed. Practically all the churches were closed last Sunday in order to avoid as far as possible any danger of further dissemination of the disease. At the beginning of the present week and during the latter part of last week some ten to twenty new cases were being reported daily. There is very good reason, then, for the precautions that are being taken It is evident that the disease is of an especially virulent character and that it is meeting with a favorable soil for its development.

Some one has said that one of the only satisfactions in having lived is to be able to say to friends, "I told you so." Were the present condition of affairs in Cambridge not so serious we would surely be tempted to say, "We told you so." For years this part of Massachusetts has been a hotbed of antivaccinationism. More has been said on the subject there than in any equal area of territory anywhere in the world. Numbers of people in that part of the State, though themselves without pretense of being antivaccinationists, have shirked their duty to the public health because of the amount of talk indulged in and have put off their vaccination from year to year. A good part of the citizens are unprotected by vaccination and smallpox rages almost as in the old pre-Jenner days in England.

Some years ago smallpox gained a foothold in the city of Gloucester in England. Gloucester had been known as one of the bitterest antivaccination strongholds in the world. The disease raged with a contagiousness and a virulence almost unexampled in the history of smallpox during the nineteenth century. The story of the epidemic became a byword and was used on the Continent to point many a vaccination moral and adorn many a lesson on the important subject of variola and vaccinia in history. We fear that the Gloucester lesson did not have all its due effect and that the supposedly most cultured section of our own country is to serve for didactic purposes for others. It is to be hoped that this at least will prove an adequate warning. There is an adage that only fools insist on learning by their own sad experience. The Cambridge developments should be watched carefully and the lesson of events taken to heart by those who, doubtful themselves, instil doubts into others as to the efficacy of vaccination, apparently for no better reason than in order that they may not be alone in their obstinacy. Health authorities should be aroused to a sense of their duties in the matter of vaccination by this event and should find little opposition to the enforcement of protective measures against the present phase of smallpox which is finding its way into every part of the country where there has been any neglect of vaccination.

THE ILLNESS OF KING EDWARD.

Twice within the short space of nine months the entire world has turned its attention to the words and deeds of members of the medical profession. No more striking illustration of the important responsibilities that the members of our profession are called upon to assume can be offered than on occasions when rulers and monarchs are entrusted to their care. Every practitioner of medicine is privileged therefore to a feeling of pride in his calling when in serving its functions for those in high estate some measure of its dignity and its value is made manifest.

Yet under such trying times as the present, the medical practitioner is not at his best. Had King Edward VII. of England been a humble boot-black we hazard the statement that his appendix would have been gracing some museum jar in less than twenty-four hours following the initial symptoms of disturbance; but being a royal personage and his attack coming at a most inopportune moment, socially considered, it seems not unlikely that his own desires, laudable though they were, may be his undoing. The personal equation in treatment is always an important element. The patient's desires, whims, and conveniences are often considered in civil life by able physicians against their best judgment; the difficulties of our London confreres in this respect can better be imagined than described.

At the present time of writing the outlook for the king is not unpromising. Taken as an outside problem with the very few facts given out by those in control the chances for recovery are happily on the increase. Abscess itself in appendicitis does not necessarily portend a fatal issue and when it is borne in mind that the ablest of the world's surgeons are in command it is certain that every resource of the profession will be laid under tribute for the benefit of the royal sufferer.

ECHOES AND NEWS.

NEW YORK.

Appointment of Dr. J. R. Hunt.—Dr. J. Ramsay Hunt has been appointed assistant visiting physician to the Montefiore Home.

Appointment of Dr. Leszynsky.—Dr. William M. Leszynsky has been appointed consulting neurologist to the Harlem Hospital.

Ophthalmologists for Schools.—Health Commissioner Lederle has appointed eleven eye specialists to examine the eyes of school-children to see if they have ophthalmia, recently declared by the Health Board to be a contagious disease. These are the physicians appointed: C. Cole Bradley, James Ogilvie, A. H. Gardner, Daniel H. Wiesner, J. B. Lynch, John A. Hill, George H. Cocks, Perry B. Hough, Henry Holbrek. O. M. Schwerdtfeger, Joseph T. Low. The physicians have reported unofficially that fully 18 or 20 per cent. of the pupils have ophthalmia and should be kept out of school.

PHILADELPHIA.

St. Joseph's Hospital.—Dr. P. F. Moylan has been appointed a member of the visiting medical staff of St. Joseph's Hospital. Since his graduation in 1887 Dr. Moylan has been connected with St. Mary's Hospital.

Polyclinic Hospital.—The trustees of the Polyclinic Hospital have elected Dr. Hilary M. Christian professor of genito-urinary surgery. Dr. Christian was for many years adjunct professor in this department and now succeeds to the full professorship made vacant by the resignation of Dr. Thomas R. Neilson.

Medico-Chirurgical Hospital.—Ex-Chief Justice Edward M. Paxson has given to the Medico-Chirurgical Hospital, in which he is president of the board of managers, $5,000 for the endowment of a free bed to be designated "The Henry Chapman Free Bed." in memory of his preceptor, the late Judge Henry Chapman of Doylestown.

Philadelphia Hospital.—The Board of Charities and Correction, continuing the plan inaugurated last year, has appointed the following resident physicians at the Philadelphia Hospital for the ensuing fourteen months. The plan referred to is that of holding an examination and then submitting the names of qualifying candidates to the faculties of their respective colleges who choose from this list their allotted number. University of Pennsylvania—H. R. Alburger, W. W. Richardson, A. C. Sautter, J. H. Allen, H. R. Kohberger, F. A. Sutliff, D. C. Morton. Medico-Chirurgical—E. B. Holmes, R. C. Loving, J. H. Small, F. P. Richards, H. Lynch, J. P. Bethel, M. J. Van Horn. Jefferson—B. B. Wormser, F. F. Agnew, F. L. Webb, H. L. Taylor, E. J. Beardsley, R. W. Wakefield, B. Bacharach. Woman's Medical—Georgiana Walter and Evelyn J. Watson. This college was entitled to three appointments, but as there were but two nominations, H. E. Sharp, Univ. of Penn., was appointed in lieu of the third.

CHICAGO.

Chicago Medical Society.—At the annual meeting, held June 18th, the following officers were elected for the ensuing year: President, Dr. William A. Evans; First Vice-President, Dr. Jacob Frank; Second Vice-President, Dr. Robert B. Preble; Secretary, Dr. Frank

X. Walls; Treasurer, Dr. A. E. Halstead; Necrologist, Dr. David J. Doherty.

Resignation of Warden Healy.—Mr. Daniel Healy has tendered his resignation as warden of the Cook County Hospital and asks that its acceptance take effect July 1, 1902. In severing his connection with the hospital, he does so with the most sincere and grateful appreciation of the trust and confidence the Board of County Commissioners had reposed in him. Mr. Healy says that the public of Chicago little knows the deep debt of gratitude it owes to the noble and unselfish men and women who are associated with the Cook County Hospital. He refers specifically to the nurses and to the members of the attending staff and the internes. He said that the nurses are splendid, wholesome women, who have given their lives to a kind and gentle profession, and they typify in their devotion to duty and their personal characteristics the loftiest ideals associated with their calling. The attending staff of physicians contains among its members the flower of the medical profession of this community. "These men," he says, "eminent in their chosen science, give freely of their talents and time without pay or emolument for the advancement of knowledge and the benefit of humanity. They regularly attend the sick and minister to the injured, and they guarantee to the poor of Chicago treatment which, if measured in money, would be priceless. The influence of such men upon the future generation is of untold value, and the good they daily perform is a credit to the finest instincts found in mankind. During my connection with the hospital, the house physicians and internes have proved themselves invaluable adjuncts to the staff and the warden. Selected from the highest type of our young manhood, upon a sole test of merit, the County internes of to-day give certain promise of a continuation of brilliancy in the Chicago medical profession, and by their untiring labors to relieve and allay suffering they have done much to advance the objects of the institution."

Commencement Exercises of Rush Medical College.—Commencement exercises of Rush Medical College were held Wednesday, June 18th, under a dripping tent, and 178 graduates took their diplomas. The graduates attended the exercises on the campus only after bitter objections had been made to taking diplomas there. The students manifested their disapproval in many ways during the exercises. The heavy rain that fell immediately after the exercises began continued until water fell steadily on the inside of the tent. Speakers, faculties, students and visitors were wet, and the exercises were abandoned before the commencement oration had been delivered. When the rain fell the hardest the floor was covered with water, and men and women stood on chairs and held up umbrellas to shield themselves. The entire graduating class stood with their chairs held upside down above their heads while the names of the candidates for degrees were being read.

Appointment of Dr. Corwin.—Dr. Arthur M. Corwin has been appointed professor of diseases of the nose, throat and ear in the Chicago Clinical School.

Improved Public Health Conditions.—The City Department of Health reports that public health conditions continue to improve, as is to be expected at this season of the year. Next to November, the month of June has had the lowest mortality rates of any of the months during the last twenty years. Last week's total deaths were 401.

Unlicensed Hospital Burns.—On June 9th, a building occupied by a hospital for inebriates, and operated by an ex-hernia curer of Denver, who now poses as a philanthropist, caught fire and ten lives were lost, the list including two physicians. It is said that the Health Department had repeatedly been asked to issue a hospital permit for this institution, and had, after repeated inspections, invariably declined.

CANADA.

Canadian Doctors Pass in England.—The following Canadian practitioners have recently been admitted members of the Royal College of Surgeons, England: P. Burnett (McGill), St. Mary's, Ont.; W. Hackney (Trinity Medical College), London, Ont.; A. R. Hall (McGill), Montreal; G. W. Howland (Toronto University), Toronto; E. A. Jones (Toronto University). Middlesex; C. P. Johns (Queen's University), Kingston; A. Levy (McGill University), Montreal; F. M. Marlow (Trinity), Toronto, and D. J. Phillip (McGill University), Montreal.

Nova Scotia Colleges to Federate.—The Board of Governors of King's College have decided by a vote of sixteen to seven to federate with Dalhousie University, Halifax. In the preamble of the articles of federation a clause was inserted setting forth that the new University shall be one with the principles of the Christian faith.

Suit for an Unauthorized Operation Fails.—An important judgment was given by Mr. Justice Doherty in the Superior Court at Montreal last week. It involved the right of a surgeon to perform an operation on the person of a patient without his consent. A man had his foot so badly crushed in a railway accident that Professor James Bell, chief surgeon to the Royal Victoria Hospital, Montreal, decided while the patient was under an anesthetic for the purpose of dressing that it would be better to perform an amputation at once. Judge Doherty held that the surgeons (Dr. Bell was assisted by Dr. O'Brien) had violated a right of the patient, for every man had a right to control each portion of his own person; but the question was whether the Court should award damages. The evidence showed that the patient was better off after the operation, and the Court could not find that any damage could be imposed. The case was dismissed with costs.

Annual Meeting of the American Medico-Psychological Association at Montreal.—The first annual convention of this Association ever held on Canadian soil was that which met in Montreal during the last week. There was a fairly large attendance representing nearly all the insane asylums of the United States and Canada. The delegates were welcomed on behalf of the citizens by Lieutenant-Governor Jette, and Dr. George Armstrong, President of the Montreal Medico-Chirurgical Society, delivered the address of welcome for that body and the medical profession generally. Dr. R. J. Preston of Marion, Va., delivered the annual presidential address, which was an exhaustive statistical record of the rise and progress of insane asylums in the United States and Canada. The following were the officers elected: President, Dr. G. Alder Blumer of Rhode Island; Vice-President, Dr. A. B. Richardson, Washington, D. C.; Secretary-Treasurer, Dr. C. B. Burr, Flint, Mich.; Councillors: Dr. G. F. Jelly, Boston, Dr. W. F. Drewry, Pittsburg; Dr. W. H. Hattie, Halifax, and Dr. M. J. White, Wauwatosa. Dr. Wesley Mills, Professor of Physiology at McGill University, gave an illustrated lecture on "The Importance of Reflex Action in the Normal Life of All Animals," in which a number of experiments on pigeons, frogs, rats, rabbits and dogs, figured prominently.

GENERAL.

Anti-tuberculous Measures in Naples.—Sanitary laws now enforced in Naples require that all tuberculous cases in hospitals, orphan asylums, prisons, hotels, schools, convents, dairies, etc., shall be reported; also that cuspidors shall be provided in all public places, with a notice forbidding expectoration elsewhere.

Record of Insalubrity.—The Chinese port of Amoy on the canal of Formosa has the unenviable reputation of being the most unhealthful place in the world. Built some ten centuries ago over a cemetery in which, according to a modest calculation 5,000,000 bodies were interred, its drinking-water is derived from wells. Plague and typhus are endemic, and the mortality reaches frightful proportions.

Hygiene of Churches.—The Bishop of Fano in North Italy provides for the association of cleanliness with godliness in his instructions to pastors; an example which might well be emulated in religious circles generally. In all churches, after feast days on which unusual numbers of people have congregated, the floors are to be cleansed with a sublimate solution 1-1000. At least once a week pews and confessional benches must be wiped with a damp cloth, and the grating of confessionals washed with lye. The appurtenances of the altar are likewise to be cleansed with lye or sublimate.

The War Against Tuberculosis.—A novel method for the dissemination of antituberculous literature has been resorted to in the Argentine Republic. A manufacturer of matches has sent out 3,500,000 boxes of matches bearing printed instructions against the propagation of tuberculosis, together with portraits of physicians who have made a special study of the disease.

Regulation of Matrimony.—The Russian law forbids marriage after the eightieth year, and in that country one may not wed more than five times.

Changes in the Medical Faculty of the University of Maryland.—Dr. L. McLane Tiffany having resigned the chair of surgery in the University of Maryland Faculty of Physic, Dr. Randolph Winslow has been elected professor of surgery. Dr. John Holmes Smith was elected professor of anatomy, Dr. D. M. R. Culbreth professor of materia medica, Dr. Frank Martin and Dr. St. Clair Spruill clinical professors of surgery and Dr. Joseph W. Holland demonstrator of anatomy.

Obituary.—Dr. Hubert F. Prager, of Brooklyn, died suddenly Sunday, at the age of fifty-two years. He was a graduate of the Jefferson Medical College, and had practised in Brooklyn for more than twenty years.

Dr. John T. Winter died at his home in Washington on Sunday, at the age of sixty years. Dr. Winter was born in Petersville, Md., and went to Washington at the beginning of the Civil War. He was a graduate of the Georgetown Medical School, one of the founders of the National University Medical School and a member of the executive staff of several of the local hospitals. He was President of the Board of Commissioners of Pharmacy of the District of Columbia and a member of the American Medical Association, the District Medical Association, the District Medical Society, the National Geographic Society and of many patriotic organizations.

Dr. Friedrich Goltz died at Strassburg on May 4th, at the age of sixty-eight years. He was well known as professor in several German universities and his claim to renown rests on his researches in the physiology of the circulatory and nervous systems. To his efforts is due the method of restoring the volume of the circulatory medium after severe hemorrhages by the injection of normal salt solution. His researches on the stimulation of the cardiac inhibitory centers by irritation of the sensory nerves of the abdominal viscera gave a new aspect to the question of shock. Other important work related to the function of the higher nerve-centers, which he succeeded in studying in animals with an extirpated cerebrum.

Dr. Milton Bettman of Cincinnati has just died in Paris. He was born on December 17, 1875, in the city of Cincinnati. After completing the public school system of that city, he entered Harvard College in the fall of 1893. He remained there three years and took his degree of Bachelor of Arts in 1897. He entered the Johns Hopkins Medical School in the fall of 18[illegible] and graduated in 1900. For one year after that he was resident physician in the obstetrical department of the Johns Hopkins Hospital, and in October, 1901, he left for Europe to complete his education there, and studied in Berlin, Leipsic, and Vienna. He had been in Paris but a few weeks, preparatory to taking up his studies there, when he fell ill on May 19th, of appendicitis and died in ten days. Among his physicians were Drs. Gros, Cazin and Jalaguier.

OBITUARY.

DR. WYATT JOHNSTON.

The McGill Medical School and the profession of Canada and of the United States have sustained a severe loss in the untimely death of this capable and energetic man. Following an infection, thrombosis of one of the femoral veins occurred and sudden death from embolism resulted.

Dr. Johnston was the son of a well-known physician of the Eastern Townships of the Province of Quebec and was educated at McGill College from which he took his M.D. degree. For a time he was associated with Dr. Osler as demonstrator of morbid anatomy; subsequently he became pathologist at the Montreal General Hospital and lecturer on pathology under Dr. Adami. He did a great deal of routine postmortem work for his colleagues and the records of the pathological department of the Montreal General Hospital for the past fifteen years are from his pen. Of late years he had paid special attention to hygiene and public health, and when the Widal reaction was discovered it was largely through his exertions and his dried blood method that it became at once of widespread practical utility. Only a few weeks ago we announced his election to the Chair of Hygiene at McGill University.

The National Public Health Association has lost one of the most influential members. But no part of Dr. Johnston's work was more thorough and valuable than that relating to medical jurisprudence. For years he had occupied in the Province of Quebec a position not unlike that of Dr. Draper in Boston, and he had utilized his opportunity to make a series of most important studies which had given him a national reputation as a medical jurist and his advice was often sought in criminal trials.

Personally, Dr. Johnston was a genial warm-hearted man, full of enthusiasm for his work and devoted to his profession. To the profession of the Dominion of Canada and to McGill University we extend our warmest sympathies in the loss they have sustained.

W. Osler.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Fifty-third Annual Meeting, Held at Saratoga Springs, N. Y., June 10-13, 1902.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Third Day—June 12.

(Concluded from page 1212.)

Vaginal Section for the Uncomplicated Symptom of Sterility with Relief of the Symptoms.—Dr. J. R. Goffe of New York reported four cases, the results of which in his estimation justify vaginal section for the relief of sterility. This refers to cases in which, whatever the pathological condition may be, sterility is the only symptom. The various extraperitoneal causes of sterility, as imperforate hymen, vaginismus, flexions, endometritis, etc., are easy to reach and reasonably susceptible to cure. Some cases are not relieved by curing these conditions, the fault lying with the tubes or ovaries. In these cases the peritoneal cavity must be opened. The four cases operated upon were detailed by Dr. Goffe. An opening in the anterior vaginal fornix allowed the manipulation of the tubes and ovaries necessary in each case. These consisted in freeing adhesions about the tubes (especially the fimbriated extremities) and ovaries, removing and resecting of ovaries and tubes, puncturing ovarian cysts, massaging the tubes, etc. In each case the uterus was curetted in addition to the other operation. Pregnancy occurred after this procedure in three cases, in one sterility has persisted. Dr. Goffe concludes that opening the peritoneal cavity through the vagina is justified in these cases. Abdominal section might even be employed, but is a more formidable operation and the vaginal route is to be preferred. A very important point in these cases is to be absolutely certain that the husband is not the cause of the sterility.

Dr. Watkins of Chicago said that vaginal section was not only justified in these cases, but it should be done as an adjunct to curettement, etc., performed with a view to relieving sterility. He would hesitate to advise abdominal section for this purpose.

Dr. Ricketts of Cincinnati said that more conservative treatment of the female generative organs was needed. Portions of ovaries will functionate and by drainage of a tube it can be saved in many serious cases of hydrosalpinx, etc.

Dr. E. E. Montgomery of Philadelphia emphasized the remarks of the preceding speaker. In a case at which he was assisting he advised leaving a very small portion of an ovary, the opposite one, having been removed. Pregnancy afterward occurred for the first time. The internal administration of thyroid extract in this case was apparently of value in causing tissue conditions favorable to pregnancy.

Dr. C. P. Noble of Philadelphia believes that conservative surgery of the ovaries is of very great value in preserving their function, but he has never seen any good result from such treatment of the tubes in cases of pyo- or hydrosalpinx. In old stages of these conditions he would not operate to relieve sterility unless the patient very strongly insisted.

Dr. C. L. Bonifield of Cincinnati has obtained good results so far as conception is concerned, from operations on the tubes.

The Influence of Prolapse of the Kidney on the Production of Pelvic Disease in the Female.—Dr. A. H. Goelet of New York spoke of the prolapsed kidney as an important factor in causing pelvic disease as a result of the congestion induced by the kidney pressing upon or kinking the abdominal veins, particularly the right ovarian and the left renal veins. In addition to this the kidney itself is in danger of becoming permanently damaged by obstruction of the ureter or interference with the blood-supply. From these causes hydronephrosis, pyonephrosis or atrophy of the kidney may occur. Some of the pelvic conditions and symptoms due to prolapsed kidney are (1) dysmenorrhea of the congestive type which tends to increase in severity; (2) profuse leucorrhea; (3) inflammatory manifestations, as endometritis, ovaritis, salpingitis, etc.; (4) hemorrhage from the uterus. From the fact that these conditions are caused, and also that prolapse of the kidney is of rather frequent occurrence, the subject is of such importance that every gynecological patient should be carefully examined to determine the position of the kidney. Treatment is by the generally-accepted methods, support with general constitutional treatment or by anchorage.

Dr. Manton of Detroit said that at least 40 per cent. of women applying to him for treatment had a loose kidney. In many of these cases chronic appendicitis, gastroptosis, etc., are points to which attention is directed instead of to the true condition. The treatment of movable kidney is to anchor it and he now does this in all cases in which the kidney is prolapsed and freely movable. The belt and pad for holding a kidney in place should be used only in the case of elderly women upon whom operation is scarcely justified.

Dr. L. H. Dunning of Indianapolis said that one of the most difficult questions to decide was what relation movable kidney bore to the symptoms commonly ascribed to it and what factor really caused the symptoms. He was one of the pioneers in operating upon movable kidney by suturing the fatty capsule to the lumbar fascia. All cases which were seen were operated upon. Two-thirds of these remained fixed, but nine-tenths of them were not relieved of the symptoms. Then a reaction set in and none were anchored for a time. This operation does good in some cases, but the fact must be borne in mind that the loose kidney is but one part of a general condition which must be treated at the same time. The operation in itself is not dangerous.

Dr. C. P. Noble of Philadelphia has operated upon about 75 cases, but if he had followed the rule laid down by some of the previous speakers the number would have been 1,000 or 1,500. The congestive troubles in the pelvis referred to are probably the result of a general condition and not of pressure by the kidney. In the majority of the cases operated upon very good results were obtained. He thinks the danger of serious trouble to the kidney in prolapse is greatly exaggerated.

Dr. C. S. Bacon of Chicago said there were two classes of cases, one of general splanchnoptosis, the other of loose kidney alone. The former can be treated by measures to strengthen the abdominal wall and by support.

Dr. A. H. Goelet said in closing that the failure to relieve symptoms in these cases was due to one of three causes: (1) Too late operation; (2) anchoring the kidney too low down; (3) anchoring it insecurely.

Pathological Condition of the Omentum as a Surgical Factor.—Dr. H. O. Marcy of Boston said that surgery had demonstrated the physiologic importance of the omentum. Its pathologic importance is not sufficiently well recognized. In addition to its being practically an abnormal lymph-gland from its rich supply of vessels, some changes have occurred which lead to the suggestion that the abundant fat may act as an adjunct to the lymphatic system. Hence the importance of protecting the omentum from injury. The possibility of a non-pathogenic or phagocytic function was also mentioned. Injuries of the omentum occur, but are less common and serious than might be supposed. Very large portions should not be removed unless there be strong indication. The tendency to adhere to freshened surfaces not only covers small wounds of the peritoneum but causes adhesion to the scars of abdominal incisions especially those in the median line. These sometimes cause inconvenience and may lead to internal hernia. After laparotomy the position of the omentum should be carefully restored.

Dr. F. H. Wiggin of New York said that filling the abdominal cavity with salt solution just before closing it helped to keep the viscera in their proper condition and prevent adhesions.

Dr. J. H. Carstens of Detroit deems the omentum one of the best friends of the surgeon. It helps to prevent hernia by adhering to abdominal wounds. The worst result from adhesions is the inability of the omentum to aid in limiting other processes.

What Cases of Placenta Previa Can be Best Treated by Cesarian Section?—Dr. F. D. Donaghue of Boston said that placenta previa was not rare in primiparæ and, contrary to the usual statement that in those cases the os is more easily dilated, he finds that it is more easily torn than in cases of normal placenta. The statistics of the various forms of previa were given with the mortality from each. The justification for Cesarian section in certain cases is found in its superiority in saving fetal life without adding to the mother's danger except in slight degree. The operation gives from 95 to 100 chances to the fetus. The Porro operation has not the justification of the conservative Sänger. The latter should be done in cases of (1) complete previa; (2) previa in primiparæ in the presence of severe hemorrhage and a rigid os; (3) when there is a history of previous operative delivery. In all cases in which there is the probability of a living child of twenty-eight or more weeks it should be considered when version is indicated if no skilled obstetrician is present and a skilled surgeon is at hand.

Dr. R. Holmes of Chicago, after deprecating the value of statistics unless they are based on one man's work, said it was pernicious at the present time to advocate Cesarian section for previa. General practitioners teach the use of the tampon, although this is not the best treatment for a skilled obstetrician to adopt. The best treatment is by the colpeurynteur with Braxton Hicks' version or by a late internal version. Cases of previa nearly always fall first into the hands of the general practitioner and the specialist does not see the woman until after she has been examined, which is a contra-indication to section, unless examination is made by an expert skilled in antisepsis. Cesarian section should be done only in cases of generally contracted or flat pelves, or in cases in which there is old cicatricial contraction of the birth canal.

In closing Dr. Donaghue said that any man who could tampon a vagina properly could also do a Cesarian section.

The Restoration of the Pelvic Floor.—Dr. C. A. L. Reed of Cincinnati described the anatomy of the pelvic floor in its bearing on laceration and the operation devised by him for its repair. The pathology of injuries consists of laceration of the superficial structures and impairment of the muscular portions. Successful operation must embody isolation of the injured muscles with exact opposition and finally restoration of the superficial structures. The operation described follows these rules and employs a suture specially adapted to secure the results aimed at. The figure-of-eight sutures are used, which pass first through the ends of the divided muscle and then cross before being brought out through the superficial tissues. This method is claimed to produce better opposition of the muscles than can be obtained with straight sutures. The steps of the operation were illustrated by a series of drainings.

Dr. Noble of Atlanta said that the fascia is the strength of the perineum and particular attention should be paid to bringing together its various layers with buried sutures. This procedure gives a perineum that will last, which is not always the case when the muscles are treated as the important part.

Drainage versus Radical Operation for Suppuration in the Female Pelvis.—Dr. C. P. Noble of Philadelphia spoke of the comparative merits of the two methods in question. He believes that simple drainage through the vagina should be the only interference in (1) large pelvic abscesses when the patient is acutely ill and perhaps exhausted by a long illness. The mortality is but 2 per cent. as compared with 25 per cent. if abdominal section be done. The abscess should be evacuated and washed out and nothing more done. When the patient is in very serious condition do not even wash out the cavity. (2) In pelvic suppuration occurring during an attack of peritonitis when there is some distention of the intestines due to paresis. (3) Suppurating hematocele following ectopic gestation. This operation saves life and preserves the pelvic organs in many cases, a very important point. Any great disadvantages in this operation must grow out of mistakes in diagnosis. Small collections of pus may be overlooked when the large abscess is opened and necessitate later operation. The inexperienced surgeon may wound viscera. In some cases the opening of the abscess is very simple, in others very difficult. Noble incises the vagina and then opens the abscess by puncture with scissors. When the pus is pointing high an incision is sometimes made in the groin, either alone or in addition to the vaginal. The important point is to do as little as possible in very severe cases. Make the opening a free one. Packing and subsequent irrigation are used only when necessary to evacuate the abscess or aid in closure of a sinus.

Dr. S. Gordon of Portland endorsed the method of Dr. Noble as being the surgical treatment of pus, the important point in saving these cases being that of doing as little as possible at time of operation.

Dr. T. S. Cullen of Baltimore said that drainage had given good satisfaction at Johns Hopkins. In post-puerperal cases with nodules in broad ligaments they open in the groin, pushing away the peritoneum and working down until the abscess is found. Uterine dilators are used to open abscesses. They have found it necessary to insert drainage.

In closing Dr. Noble said the great field of this procedure is in post-puerperal cases, removal of the tubes being very seldom necessary. Drainage need not be inserted if a free opening be made. He sometimes extends it from one bone to the other. He does not incise above Poupart's ligament unless the pus is pointing near the surface, for nearly every case so treated develops a hernia. Hence for cases of pus deep in the broad ligament he prefers the opening from below.

The Advantage of the Vaginal Route in Obese Cases.—Dr. W. H. Humiston of Cleveland said he did not endorse the increasing popularity for vaginal hysterectomy, but finds that method expedient in certain cases, notably when the patient is very obese. In some of these patients the vitality of the tissues is at low ebb and the fat is also a mechanical barrier to abdominal hysterectomy. A case of a woman five feet seven inches in height and weighing 281 pounds, was detailed. She was anemic, had an irregular pulse, etc., but vaginal hysterectomy with bisection of the very much enlarged, impacted uterus was accomplished with comparative ease.

Dr. J. W. Bovée of Washington said that vaginal hysterectomy was proper in these cases, but not for cancer. It is also advisable in some cases of ruptured ectopic gestation if adhesions are very numerous. If ruptured into abdominal cavity the abdominal route is the only one to employ.

Dr. S. Gordon of Portland said the Section should not go no record as saying that vaginal hysterectomy was increasing in this country. On the contrary its popularity is decreasing. In closing Dr. Humiston said he did only abdominal hysterectomy a few years ago, now he studies his cases more closely and uses the method which seems best adapted to the individual case.

Adenomyomata of the Female Generative Organs.—Dr. T. S. Cullen of Baltimore gave a lantern-slide demonstration of the structure of adenomyomata, 19 of these tumors being found during an examination of over 700 myomata of the uterus. The tumor is made up of a myomatous growth in the uterus with an extension into it of normal uterine mucosa. The glands never penetrate the normal uterine wall, but are confined to the growth. Various sections show a direct communication between the glands of the tumor and the uterine mucosa, the latter projecting into the growth. There has been no suspicion of malignant change in any of the tumors studied. They may be divided into three groups: (1) When the uterus maintains a relatively normal contour; (2) subperitoneal; (3) submucous. Their origin is believed to be the uterine mucosa rather than Müller's ducts, as at first supposed. Prognosis is favorable. Clinical manifestations are pain during menstrual period with more profuse flow than normal. Differential diagnosis is made at time of operation or by the microscope. Dr. H. O. Marcy of Boston said there were indications that the glandular structure of these tumors was not derived from the uterine mucosa, but developed *pari passu* with the tumor itself. There is much yet to learn regarding these growths. Dr. Nelson of Chicago spoke of the former treatment of myomata by ergot as perhaps having a rational basis. He asked if there was any indication of the origin of the myomatous portion of the tumor.

In closing Dr. Cullen said the origin of myomata was probably due to some inherent change in the uterus proper about which we know no more than is known of the origin of carcinoma.

Chronic Inflammation of Uterine Appendages Treated by Mercury Cataphoresis.—Dr. G. B. Massey of Philadelphia detailed 4 cases in which improvement followed the application, through the vaginal wall, of electricity to masses in the broad ligament. An electrode coated with mercury is employed, this method causing no permanent damage to the tissues with which it comes in immediate contact.

Post-operative Intestinal Paresis.—Dr. F. H. Wiggin of New York spoke of the need of early diagnosis and prompt treatment in this condition. It is one of the most frequent of post-operative conditions following abdominal section and is also least often recognized in its early stages. The rapid development of gas is probably due more to faulty innervation of the intestine caused by injury during the operation than to fermentative changes in the intestinal contents. Paresis should be suspected if at the end of eighteen hours post-anesthetic nausea still persist, and if there be regurgitation from the mouth of a clear or yellowish fluid, no passage of gas from the anus, slight distention of the bowels, and a rise in temperature. This is to be distinguished from peritonitis by the fact that it comes on earlier, there is no tenderness of the abdomen, the pulse and respiration are not those of peritonitis. This condition should be prevented by careful preparation of the patient before operation by catharsis and washing out of the colon. In acute cases which have not been kept in the hospital for this preparation the stomach should be washed out immediately after operation and four or five ounces of saturated solution of magnesium sulphate introduced, and the rectal tube passed every six hours. In the early stage of paresis a bowel movement is the important thing. A Seidlitz powder should be given, the white being dropped on the surface of the water containing the other and drank at once. The patient should be sternly told to retain it. If rejected it should be repeated in fifteen minutes. If the bowels move some hot peptonized milk is given and the patient is out of danger. If the powder is not effective, wash out the stomach and introduce four or five ounces of saturated solution of magnesium sulphate. Give strychnine hypodermically in one-thirtieth-grain doses; also atropine. Give patients no morphine after operations to avoid predisposition to paresis. There is little difficulty in treating the condition if it be recognized early. Active measures must be instituted within eighteen hours after operation.

Dr. Noble of Atlanta spoke of post-operative treatment of patients. He uses nitrous oxide and ether for anesthesia, washes out the stomach immediately after the ether is stopped in all cases, and gives nothing by mouth until nausea ceases, though nausea is very rarely present. For moving the bowel an enema of alum and water is given, followed by three or four compound cathartic pills powdered and given in a capsule. This is retained better than is calomel. Dr. C. L. Bonifield of Cincinnati thinks sepsis is the cause of the majority of fatal cases. Exposure of intestines to cold also has a bad effect. He also spoke of the decided disadvantages of using salts in the preparation of patients. The bowel may not be cleared and water is abstracted from the tissues. He uses compound extract of colocynth and advises patients to drink freely of water during the two or three days preceding the operation.

In closing Dr. Wiggin said he did not use salines in preparing for operation. He uses compound cathartic pills and washing of colon. Intestinal paresis is not due to sepsis as the trouble is over as soon as the bowel acts freely.

Fourth Day—June 13th.

Critical Remarks on the Methods of Operation for Cystocele With and Without Prolapse of the Uterus.—Dr. C. O. Theinhaus of Milwaukee spoke of the conditions present in partial and complete prolapse of the uterus. In the latter condition the uterus is found to be retroflexed or retroverted. These positions therefore predispose to prolapse and operation for the cure must fix the uterus to avoid their repetition, another essential being to guard against the formation of a diverticulum of the bladder. He advocates the method of dissecting the bladder entirely loose from the uterus, inserting a purse-string suture to push it back and then anchoring the uterus directly under the bladder to support it. This is applicable only in women over forty-five years of age.

Dr. W. F. Metcalf of Detroit thinks this would interfere with the circulation of the organ, when the uterus is to be removed he does a vaginal hysterectomy and repairs the perineum. When the uterus is to be saved, a ventral suspension is done.

Dr. H. D. Ingraham thinks the operation described causes too much abnormality in the position of the uterus. Hysterectomy is the worst operation that can be done in these cases.

Dr. Boyd of Philadelphia treats the condition of prolapse as being one of hernia. Removal of the uterus will not cure the hernia. The great point in operating is to reduce the weight of the uterus as much as possible by amputation of the cervix. This, with repair of the perineum, he does at one operation. At the end of three weeks he opens the abdomen and suspends the uterus.

Dr. C. L. Bonifield of Cincinnati said the condition was best treated as one of hernia. The credit for the idea of dissecting the bladder from the uterus, should be given to Dr. I. S. Stone of Washington. The uterus should not be removed. Women who have had a bad prolapse should not be allowed to become pregnant.

Surgical Treatment of Internal Hemorrhoids.—Dr. W. F. Metcalf of Detroit described his method of dealing with internal hemorrhoids, prefacing his remarks with the statement that the reflex phenomena of hemorrhoids are very similar to those produced by pathological changes in the generative organs. Necessary operations upon the rectum should be done by the gynecologist and, in the majority of cases, at the same time as the work upon the uterus and its adnexa. Internal hemorrhoids consist of dilated vein extremities embedded in fibrous tissue. They arise between the sphincters, but may extend above the internal sphincter. They can be cut without hemorrhage unless they have extended above the internal sphincter. There they will bleed and ligatures will probably be necessary. Metcalf clips the fibrous tissue with curved scissors, the sphincter not having been forcibly dilated. After completing the circle of the bowel the sphincters are dilated to see if all parts have been reached. Bleeding is easily controlled by forceps applied for a short time. This operation leaves strips of membrane which prevent contraction and stricture. There is little after-discomfort to patient. When there is total prolapse, a modified Whitehead operation is performed. The point emphasized was that the danger of hemorrhage from ordinary or even the Whitehead operation has been greatly exaggerated.

Election of Officers resulted as follows: Chairman, Dr. A. P. Dudley, of New York; Secretary, Dr. C. L. Bonifield, of Cincinnati.

SECTION ON PRACTICE OF MEDICINE.

SECOND DAY—JUNE 11TH.

(Continued from page 1202.)

Venesection.—Dr. H. P. Favill of Chicago said that Trousseau sifted the material at hand in his time for the determination of the possible benefit that might be derived from venesection and gradually drew the profession of the world away from its practice. As in all movements in medicine, however, the tendency to go to extremes became manifest and venesection fell into too much disrepute. Trousseau discredited the exaggerated claims made for it and showed that many patients progressed less favorably after bleeding than when merely expectant treatment is used. In Trousseau's time, however, there was no thought of the incapacity of the heart to move the blood under certain circumstances and the indications for venesection supplied by the fact that the failing heart-muscle is incapable of moving the whole volume of blood in the body yet may readily move a smaller quantity had not been recognized. This undoubtedly constitutes an important present-day indication for venesection and inadequacy of heart must be recognized as a symptom complex with a definite significance pointing to a definite treatment. That treatment should be the relief of the circulation by the removal of a certain amount of blood.

Illustrative Cases.—Dr. Favill gave the details of some cases recently under observation in which venesection proved of very satisfactory service and seemed to be even to be lifesaving in its effect. The first patient, an elderly man, caught a severe cold and, as he said himself, became completely stuffed up. Dr. Favill saw him six hours after the first symptoms and at this time râles could be heard all over his chest. The heart sounds were almost inaudible; partly, however, it must be confessed because of the many other noises in the chest. An extremely feeble pulse showed that the heart was laboring very much. The patient was suffering from an intense pulmonary congestion and Dr. Favill's prognosis was absolutely unfavorable. Death seemed inevitable in a few hours. The symptoms were relieved by blood-letting and once the heart passed the preliminary stage of inadequacy it reacted very well and all the unfavorable conditions passed off. In this case though the patient was old, the reactionary power was good.

Unfavorable Case.—In a very severe pneumonia case in a comparatively young man, Dr. Favill thought to relieve the toxemia as well as the difficulty of moving the blood-stream by venesection. In this case, however, the heart-muscle did not respond and the patient, though the symptoms were relieved very much for some hours, relapsed into an unfavorable condition. A slight amount of blood was removed once more, but the patient did not respond to the treatment and a fatal termination took place. The favorable effect of venesection then depends on the existence of a condition of organs that will respond to the therapeutic measures.

Status of Venesection.—In selected cases, according to Dr. Favill's opinion, harm will very rarely result from the use of venesection. Many of the theoretical contraindications to its use are fanciful. Discrimination must be employed, however, not quite so much because of possible danger to individual patients, as from the fact that the use of this measure too generally will serve to bring discredit on what is undoubtedly an important therapeutic aid. The profession abandoned the use of venesection too much and in the future will have to realize that it has an important place in therapeutics the limits of its usefulness being carefully defined by the clinical experience of those who have employed it conservatively.

In discussing Dr. Favill's paper Dr. Greenleaf of Louisville said much has been said of the lost art of venesection. In recent years the pneumonia death-rate in spite of all advance in therapeutics has become higher rather than lower. If the lost art of venesection were restored undoubtedly many patients who now die from pneumonia would be saved. The laboring heart of a severe pneumonia can be better relieved by the removal of an appropriate amount of blood from the circulation than by any other means.

Repeated Venesection in Pneumonia.—Dr. Charles G. Stockton of Buffalo said that in his personal experience the repeated withdrawal of a small amount of blood in pneumonia not infrequently appears to be lifesaving. There is a special time in the course of a pneumopneumonia when venesection will bring most relief. This is during the period of congestion, just before hepatization of the lung takes place. Immediately after this there is a relief of the symptoms and a temporary recession of the inflammatory process in the lung takes place. The patient's bleeding is better for from twelve to eighteen hours after the withdrawal of the blood. Dr. Stockton considered, however, that large amounts of blood should not be withdrawn. He has found as much good accomplished by a bleeding of from 200 to 300 c.c. as from the removal of 600 to 800 c.c. If the symptoms become threatening again the venesection may be repeated, and will always give the same good results.

Digitalis and Aconite in Cardiac Disease.—Dr. Hobart Amory Hare of Philadelphia said that the principal difficulty for the practitioner in the use of drugs is the lack of knowledge with regard to the action of remedies in pathological conditions. Too much etiology is taught and at autopsies the worst possible forms of tissue degeneration are seen, those with which Nature was unable to cope, and consequently there is little faith in remedial measures. Physiological action of drugs is studied nearly always under practically normal conditions and the results thus obtained are by no means sure to be of practical application in diseased conditions. Digitalis is an example of one of the most useful drugs that the medical profession has in its hands and yet it represents a remedy that has been and is still very much abused.

Muscular vs. Valvular Heart Disease.—Some practitioners as soon as they diagnose the presence of valvular heart-disease give digitalis without consulting at all the condition of the heart-muscle. The opposite state of affairs would be much better. The practitioner might well neglect the valvular condition if only the heart-muscle were well studied. When the heart-muscle and the arteries are both affected by arteriocapillary fibrosis, then the use of digitalis must be pursued with care and circumspection. Digitalis is usually given in doses that are too large and its employment is continued beyond the time when it really does any good. Reasonably large doses of digitalis should be employed at the beginning of the treatment of the heart conditions in order to carry the patient over the crises of the affection, but these larger doses should not be continued. Good results can be obtained with from one to two minims of the physiologically tested solution of digitalis. Unfortunately digitalis is frequently more or less inactive because it is not tried in this way before being used.

Rest and Aconite.—While digitalis is being used the physician should insist on the patient being absolutely at rest. Usually when there are symptoms of a break in compensation the heart overacts because of the hypertrophy present and for this aconite which acts as a sedative on the vagi is an excellent prescription. At times it will be found that men suffering from heart disease and under treatment for the symptoms produced by it have the erroneous impression that they must take exercise in order to keep themselves in good condition. The necessity for rest is often not sufficiently insisted on. Physicians themselves, when suffering from heart affections, are especially prone to neglect this direction. Their toilsome round of routine life is sure to prevent the proper action of heart tonics. Like bankers and brokers, their interest in many things is prone to call their attention away from themselves until serious conditions assert themselves.

Small Doses of Digitalis.—Dr. Favill of Chicago said that he is personally persuaded that digitalis is given in larger doses and its use in large doses is prolonged not only more than is necessary, but to an extent that makes them harmful for the patient. With the modern stronger preparations of digitalis, practitioners are sure to do harm, unless they are careful in this regard.

Digitalis and Nitroglycerin.—Dr. Allen Jones of Buffalo said that it is an extremely important precaution to combine nitroglycerin with digitalis. In a case recently under observation the patient was liable to anginoid attacks, as the result of coronary degeneration. Digitalis was given in ten-minim doses every four hours, but the condition did not improve much. Finally a tendency to collapse asserted itself, the heart became very slow and at last almost stopped. By Dr. Jones' suggestion nitroglycerin was added to the remedies taken and then the annoying symptoms disappeared. Another important accessory to digitalis is, in old people particularly, the use of the iodides. It is not the employment of digitalis alone that will do good in many heart cases, but its combination with rest and with other remedies that will enable the patient to regain the loss of compensation.

Prolonged Use of Digitalis.—Dr. Anders of Philadelphia said that the prolonged use of digitalis undoubtedly does much more harm than good. Digitalis is apt to be given in too large doses over too long a period. The use of digitalis should be stopped when there is no urgent indication for its employment. Whenever after digitalis has been employed there is hardening of the vessels showing that blood-pressure is raised considerably, then nitroglycerin should be employed with it. This is especially to be done whenever there are symptoms of the presence of a weak myocardium in the case. Not only does nitroglycerin act favorably by widening the blood-paths, but it is itself very probably a cardiac stimulant of no mean power.

Digitalis and Other Remedies.—In concluding the discussion of the paper Dr. Hare said that digitalis had certainly done a great deal of harm because used without proper indications and its rarer employment would be a decided advance. It should never be given without careful observation of the pulse, so as to avoid any raising of the blood-pressure. It should nearly always be employed in combination with nitroglycerin. This is not mentioned in the paper, because the subject was the use of digitalis and aconite and the whole subject of the drug treatment of failure of compensation could not be treated in a single paper. Dr. Hare is accustomed to tell the students of Jefferson Medical College an allegory something like this to illustrate the use of digitalis and nitroglycerin. If one were to see an old man carrying a bundle of faggots that are evidently too heavy for him, he might be relieved either by giving him some whiskey that will stimulate his flagging powers, or by removing some of the load that he was carrying. Digitalis is the stimulant; nitroglycerin the removal of some of the load.

Physiology of Digitalis Action.—In the wide diastole of the heart that occurs when digitalis is used the mouths of the vessels of the besii are made very patulous. Through these the heart muscle absorbs no inconsiderable amount of its nourishment. It has been decided by physiologists that it does not receive all its nourishment through the coronary artery. The use of digitalis then is extremely important in order to stimulate the nutrition of the heart muscle itself. Besides, of course, by lengthening the pause between the beats, it gives that interval of rest which is so important for the reconstructive metabolism of the cardiac tissues.

Tuberculous Myocarditis.—Dr. J. M. Anders of Philadelphia said that comparatively little has been written on the subject of tuberculous myocarditis. Laennec in his classical monograph said that the heart is in frequency the thirteenth organ affected by tuberculosis. He gave, however, no illustrative cases and did not even refer to his autopsy record. Altogether some 12 cases of tuberculous myocarditis have been reported and to these Dr. Anders now adds twelve cases taken from the recent literature including two of his own. One of the most striking peculiarities of these cases is that they may cause unexpected death and one of Dr. Anders' cases proved to be of this unfortunate kind.

Unexpected in Tuberculous Myocarditis.—The patient was a young man, twenty-two years of age, who complained of pain in the left mammary region. This was considered to be due to pleurisy and some signs of effusion were found which later increased in amount, though not sufficiently to interfere much with the heart action? The patient seemed to be reasonably comfortable, but on the seventh day after a single cry, had a startlingly sudden death. Fortunately the affection itself is a very rare one and these sad occurrences are not frequent.

Rare Primary Tuberculous Myocarditis.—Some cases of primary tuberculous myocarditis are claimed to have been found, but an analysis of the cases, scarcely serves to confirm the claim. The affection is practically always secondary to tuberculosis in some other part of the body. The rarity of tuberculous myocarditis, may be judged from the fact that Rokitansky's autopsy records for twenty years have been searched without finding a record of a single case. In a series of 700 autopsies on tuberculous cases in Ger many only two gave evidence of involvement of the myocardium. As a rule when tuberculous lesions of the myocardium were found they used to be considered gummata. Even Virchow classed as gummata of the ventricles, lesions which are now known to be tuberculous because of the presence of tubercle bacilli. These lesions are, however, always the result of infection in a focus somewhere else in the body. In one reported case in which the tuberculosis of the myocardium was claimed to be primary, there was really a miliary tuberculosis with no good reason for thinking that it started in the heart rather than in any other part.

Conditions for the Development of Tuberculous Myocarditis.—There seems to be little difference in susceptibility in the sexes, the cases being about equally divided. Trauma is an important predisposing cause. Most frequently the tuberculous infection of the myocardium has been secondary to pericarditis. The ventricles are more commonly affected than the auricles and in no reported case have the auricular walls alone been affected. In one case where macroscopically the tuberculous lesions seem to be only in the auricle, a number of minute tubercles were found in the wall of the ventricle.

Cellular Life.—Dr. Victor C. Vaughan of Ann Arbor, Michigan, then read a paper on this subject, which had not been read the first day because of his presence at the meeting of the House of Delegates. He said that all life is cellular and therefore the simplest problems of existence can be studied in the unicellular organism. The single cell has to perform all the functions of life. Ingestion, digestion, excretion. Colonies of unicellular organisms are like country communities, in which by supposition every man would be his own tailor, shoemaker, butcher, baker and so forth. Higher in the scale of being, cells are differentiated for various purposes. In man certain groups of cells do definite work for themselves and for others. There is an interdependence of various organs that shows the essential unity of the being.

Cellular Functions.—Many important functions may be demanded of the same set of cells. The cells lining the gastro-intestinal sac may furnish proper secretions for the digestion of food and yet some fault in their well-being may prevent proper absorption. No cell is superfluous. Life is dependent on the vigor and activity of the cell and yet deaths are constantly occurring among them. In health degeneration of the cells goes on so that the balance of cellular activity is always kept at a certain level. At present one knows scarcely more than the morphology of the cells, or the histology of the tissues of which they are the components. Of the physiology and chemistry of cell-life we have but slight knowledge.

Autogenous Toxic Conditions.—Whenever a number of cells grow on a favorable medium, their growth comes to be retarded by the presence about them of certain substances which they themselves produce. This is true for the unicellular organism like the ferments, but it is true also of all plants and animals. Cellular activity leads in all of them to the production of substances that are poisonous to life. Animals may be fed on pure water and food without a trace of any toxic substance in it, and yet poisonous materials will be produced during the process of metabolism. These poisonous substances not infrequently are so constituted, that their molecules resemble somewhat those of hydrocyanic acid. It is the result of this peculiar law so common in the biology of living things that autogenous diseases occur. The cells of the body produce materials noxious even for themselves.

Autointoxication.—Autointoxication is the word that covers an amount of ignorance. As usually employed it signifies that the individual is being poisoned by the production within him of toxic materials because of the fact that pathogenic bacteria are growing in the intestinal tract. There is, however, a true autointoxication that is a production of substances that may inflict serious injury on the cells of the body. This is very well illustrated by the effect of normal bile on the pancreatic cells. Why bile should prove so destructive of the cells of the pancreas and yet affect the liver-cells or the cells of the biliary duct, this is difficult to understand. Besides this exact meaning, however, there are certain other meanings of the word autointoxication that must be considered.

Toxins of Imperfect Digestion.—When digestion is carried on imperfectly there are two serious results that follow—first there is insufficient nutrition, which of itself lowers vital resistance. Second, when imperfectly digested substances are absorbed they act as poisons within the body. Processes in the digestion of albumin lead to the formation of peptones and albumoses. These substances when not modified by the cells of the intestinal tract are poisoned with a special effect in the lowering of blood-pressure. The depression that is so common after a full meal is said to be due to this depression of blood-pressure by the presence of peptones in the circulation.

A second form of autointoxication is the effect of certain secretions upon tissues with which they normally have no relation. The bile and its effect upon pancreatic cells have been mentioned and it is curious, considering the anatomical conditions that exist that the bile does not find its way oftener into the tissues.

Organotoxemia.—Recent studies show that certain organs seem to have the function of preventing toxic substances from entering the circulation. When these organs fail to perform their function properly, some form of toxemia results. There seems to be a marked tendency for mucus to form in the body unless it be counteracted by the presence of some substance from the thyroid gland. When this thyroid substance is absent, mucinemia is the result. This is, of course, the familiar affection myxedema.

Appendicitis from a Physician's Standpoint.—Dr. James Tyson of Philadelphia read a paper on this subject, in which he announced his opinion that in all cases in which a true inflammation of the appendix exists, the affection is surgical rather than medical and an operation should be recommended. The only function that the medical man has in attending a case of appendicitis is to help tide the patient over the acute symptoms of a primary or recurrent attack so that the operation may be done after the subsidence of acute symptoms. When there seems any doubt as to the subsidence of symptoms the surgeon should be called in consultation and operation should not be delayed if the condition be at all grave.

In certain cases it is not easy to decide whether appendicitis is really present or not. In such cases the medical man has a true function in watching the case in order to obtain the data necessary for an absolute diagnosis. In such cases a seeming attack of appendicitis may be followed by recovery without danger of recurrence. In true appendicitis, however, the recovery is only apparent. Hence, when the medical man has once convinced himself that the appendix is really affected, if a competent surgeon can be secured he should use the weight of his influence in order to obtain permission of patient and friends for operation.

Third Day—June 12th.

Gout in the United States.—Dr. T. B. Futcher of Baltimore, Md., said that it is the custom to think that while gout is quite common in England it is very rare in the United States. Osler says in his text-book that it is not of frequent occurrence here. In England its causation is attributed to the fact that the people are heavy eaters and liberal drinkers of malt liquors. Besides this, several generations ago these peculiarities were more noticeable even than at present. Sir Dyce Duckworth says with regard to gout in the United States that our mixed race composed of Irish, German, Swedes and Norwegians, besides elements from the center of Europe, are likely to keep it out for a long time. Besides this our people are light drinkers of beer, the excess being rather in the matter of distilled liquors than fermented liquors. A consultation of hospital statistics at Johns Hopkins Hospital at Baltimore, however, shows that some of these impressions with regard to the influence of gout in the United States are not well founded.

Failure to Recognize Gout.—It is well known that gout is often not recognized in this country. This is true even when there are tophi in the ears or in the fingers. Certain of the life insurance companies in this country report that the mortality from gout represents no inconsiderable factor in their yearly losses. In the thirteen years during which Johns Hopkins Hospital has been open, 13,400 medical cases have been under treatment. Of these 36 suffered from gout. During these thirteen years about 130,000 medical cases have been under treatment at St. Bartholomew's Hospital in London. Of these over 450 have suffered from gout. According to the proportion of patients under treatment then, gout in hospitals in London is only one-third more frequent than it is in the United States. Gout as diagnosed at Johns Hopkins Hospital nearly always presents such outspoken symptoms that there can be very little doubt of the true nature of the disease. In most of the cases tophaceous deposits were present in which the characteristic needles of biurate of soda could be discovered under the microscope.

Conditions of American Gout.—From the records of the cases under treatment at Johns Hopkins there seems to be very little heredity in American gout. Occasionally it is true, there is a story of rheumatism in the preceding generation, which may very well have been gout. Very few patients care to confess the existence of a family tendency to gout. In the words of Sir William Brown, gout is here in America, freehold and not copyhold. Careful investigation of the histories of many patients seems to show that fermented liquor is much worse in producing a tendency to gout than are the distilled liquors. There seems to be very little reason to think that any special peculiarity of the food is of importance in the etiology of gout.

Lead and Gout.—While we do not know the reason, it is evident now to all who have studied the question that lead is extremely important as an etiolgical factor in gout. One in four of those who are under observation at Johns Hopkins Hospital were plumbers or painters, or tinners, or in some way connected in their daily occupations with the handling of lead. It seems clear that the changes induced by lead in the tissues predispose to the occurrence of the biurate of soda deposits so characteristic of true gout. The gouty kidney is in many ways the same as that produced by the presence of lead in the tissues for a long time.

Age of Gouty Patients.—Gout is rare under twenty years of age. It is commonest in the old, though primary attacks of the disease usually do not occur late in life. One of the patients under treatment at Johns Hopkins Hospital was seventy-five years of age, but had a history of a number of previous attacks. It is evident that gout by no means necessarily shortens life.

Sex is a factor in the disease, but probably only in as far as the occupation and mode of life of women and their habits with regard to intoxicating liquors preserve them from some of the circumstances which favor the development of gout. Less than one-fourth of the cases of gout seen in England occur in females and the disease seems to be even rarer in the United States.

Uric-acid Contents of the Urine.—During the course of an attack of gout the uric acid in the urine increases in amount until the acme of the acute symptoms is reached. After the subsidence of the symptoms, the excretion of uric acid drops below the normal for some time. When a number of attacks of gout occur at short intervals, the interval of elimination of uric acid is prone to be decidedly below the normal. In one chronic case under observation at Johns Hopkins, no uric acid occurred during the intervals of the attack at all.

Occurrence of Tophi.—In over one-half the cases at Johns Hopkins Hospital tophi were found. Fifteen out of the 36 patients had tophi in the cartilages of their ears, very well justifying Prof. Osler's warning that in cases of doubtful, painful conditions, the ears should be very carefully examined. In a few of the cases the tophi occurred over the elbow joints and over the patella. Only once were tophi found over the big toe joint. Once a large nodule occurred over the Achilles tendon causing a great deal of discomfort. One patient presented a group of tophi over the sacrum. In some of these cases the external appearance was not unlike that of the fibrous nodules of rheumatism. This constitutes a serious danger of failure to recognize cases of gout. In a few cases suppuration of bursæ occurred and in the pus from these abscesses acicular crystals of urate of soda were found.

Vascular and Heart Conditions.—In 23 out of the 36 cases an easily recognizable amount of arteriosclerosis was present. Curiously enough the heart was not nearly so often affected as were the arteries. In five patients mitral disease was present. In one there was persistent embryocardia for several days. This would seem to indicate that even when there were no lesions of the valvular apparatus the heart-muscle itself had become involved in the sclerotic changes and so was not capable of functioning properly under difficulties.

As might be expected from the vascular condition as well as from the well-known tendency of gout to affect the kidneys, most of the patients presented distinct symptoms of nephritic involvement. At least 75 per cent. of them presented serious organic renal disease. The occurrence of uric-acid sediment in the urine was not noted in most of the cases. Though there is a popular notion to this effect, careful investigation of some of the cases with the idea of determining the value of the popular impression seems to show that this is not a gouty tendency. There are too many factors involved in the preservation of uric acid in a solution to think of its deposition as pathognomonic of gout.

Complications.—Pericarditis occurred in several cases and seems to be not an unusual incident in severe forms of gout. Unilateral parotitis occurred in one case and though very unusual seems to be essentially connected with the gouty process. Several cases of retrocedent or visceral gout occurred. In one characteristic case the symptoms began with pain around the umbilicus followed by extreme abdominal distress. Tympanites set in and other symptoms of peritonitis developed. It was though that perhaps intestinal obstruction had occurred. After laparotomy, however, nothing could be found to explain the intestinal distention.

Differentiation of Gout and Rheumatism.—Gout is by no means limited in its effect to the joints of the feet. In many of the cases multiple arthritis is noticed.

It is easy to understand how such cases, especially if no tophi be found, or if they are not looked for carefully, may be mistaken for rheumatism. In fact one of the cases under treatment at Johns Hopkins was admitted three several times to the hospital for rheumatism with multiple arthritis when the fourth time on admission tophi were found and the case proved to have been all along of a gouty and not a rheumatic nature. The differential diagnostic sign is the presence of tophi with the characteristic needle-shaped crystal that may be found on microscopic examination of a portion of one of the nodules. The uric-acid curves in the urine has been suggested as of diagnostic importance, but its determination is possible only in an institution.

Frequency of Gout.—It seems evident then that gout is much more frequent in this country than has been supposed. It is only one-third more frequent in London than in Baltimore and there is no good reason to think that Baltimore presents a larger percentage of the affection than other American cities. There is at least one factor in Baltimore that might seem to decrease the normal American percentage. None of the cases of gout were noted in negroes, though these constitute a goodly proportion, certainly larger than anywhere in the north of the United States of the number of admissions to the hospital. It is evident too that gout in this country is earned rather than inherited. Fermented liquors have much more to do with its causation than spirituous liquors. Nothwithstanding the fact that our beers are light, they still seem to be active in the production of the tissues-changes that underly gout.

Gout Infrequent in Boston.—Dr. Richard Cabot of Boston said that he carefully analyzed the statistics of the Massachusetts Hospital some years ago in order to determine the frequency of gout in Boston. The disease was found to be very rare. Dr. Cabot is of the opinion that uric acid and its presence in the urine has very little to do with the occurrence of gout. He asked Dr. Futcher whether there were not other circumstances connected with the attack that might be considered to account for the uric acid quite as much as the gout itself. He also asked whether the symptoms of retrocedent gout were not really those of uremia. The kidneys are almost constantly affected in gout and it would seem too that the supposed retrocession is due to the occurrence of uremic symptoms, because of nephritic conditions.

In replying to these questions Dr. Futcher said that personally he was not persuaded that the uric-acid curve noted in the urine had anything to do directly with the gout. Certain of the symptoms of retrocedent gout in his mind apparently confirm the idea of uremic basis of the condition.

Gout and Rheumatism.—Dr. James J. Walsh of New York said that undoubtedly a number of the cases in which the salicylates failed to be effective in relieving the symptoms of supposed rheumatism were really examples of gout and not rheumatism. In a preceding generation gout may have been very rare in the United States, but it is certainly growing more frequent. Dr. Walsh called attention to the fact that a number of cases of Heberden's nodes occur in this country and asked if others had observed them and whether they had any connection with supposed gouty tendencies. usually they develop without any pain and considerable deformity is present before the patient's attention is called to it. According to English popular and medical traditions, Heberden's nodes are usually associated with longlevity.

Dr. George Dock of Ann Arbor, Michigan, said that gout has certainly been considered to be rare in this country and Dr. Futcher's study is therefore an extremely important contribution to American Medicine. Dr. Dock is surprised to find that the disease should be so infrequent in Boston as compared with Baltimore. Personally he has seen very little of it, but then surrounded by a rural population the disease would scarcely be expected to occur frequently in the class of hospital patients under his care. Dr. Dock has seen a number of cases of Heberden's nodes, usually in patients who had been told or who conceived the idea themselves that they had gout and came to inquire the significance of them. He does not know whether their presence is associated with longevity or not, because his patients had not been for a sufficiently long time under his observation. The lesions seemed to occur, however, by preference in people of tough fiber who might be expected to live for a long time.

Heredity of Gout.—Dr. Allen Jones of Buffalo said that in that city gout as seen at the present time is not associated with heredity and is certainly much more common than formerly. Careful investigation of cases of rheumatism will frequently reveal pathognomonic signs of gout.

Gout in the Negro.—Dr. Witherspoon of Nashville, Tennessee, said that gout is infrequent in Tennessee, but he has seen at least one case of true gout in the negro. In this patient tophi occurred over the cartilages of the ears and in these lesions needles of biurate of soda were demonstrated under the microscope. In a case of gout in a white person Dr. Witherspoon made the observation that the affection was invariably preceded by an attack of tosillitis. In this case the tophi were over the large toes and gave so much trouble in walking that they had to be removed a number of times, but reformed, however, afterward, as the result of farther gouty attacks.

Uric-acid Elimination.—Dr. Croftan of Philadelphia said that the factors determining uric-acid elimination are extremely complex. There are two principal sources of the material. First, the food ingested, which practically always contains, if of animal origin, a certain amount of uric acid. Secondly, the uric acid produced by disassimilation processes in the tissues themselves. It is this latter form of uric acid that is usually supposed to be productive of diseased conditions in the body. In order to determine the source of the uric acid that occurs in the urine all the food taken will have to be carefully examined and its uric-acid contents determined. Almost needless to say this would make an extremely complex problem. It is possible however, that the problem of uric-acid elimination might be approached in another way. Failure to eliminate uric acid is said to produce gouty disturbances. The individual ability to eliminate uric acid might be studied by injecting uric acid into the circulation and studying the course of its elimination.

The Uric-acid Curve and Retrocedent Gout.—Dr. Futcher said that he is himself a sceptic as to the diagnostic significance of the uric-acid curve in the urine of gouty patients. His observation would not contradict the idea that retrocedent gout may be due to uremia. Unfortunately no bacteriological examination of the contents of the peritoneal cavity was made in the case in which operation was done and so it can not be said with certainty that some form of obscure peritonitis was not present.

With regard to Heberden's nodes Dr. Futcher considers that they are rather frequent, but that they have no connection with true gout. Their association is generally conceded to be rather with arthritis deformans.

Recent Investigations of Diabetes.—Dr. A. C. Croftan of Philadelphia discussed the results of recent experimental work on physiological processes related to diabetes. The fundamental experiment of the newer physiology in this matter is the action of blood upon sugar solutions outside the body. Drawn blood destroys the sugar containing it in a very short time. If blood is allowed to flow into a sugar solution, some of the sugar disappears after the combination has been allowed to stand for some time the process by which the sugar is destroyed is analogous to fermentation. The question of most importance to physiologists has been then, Is the sugar-destroying material contained in the serum of the blood, or in the red or white blood-corpuscles. A mixture of blood-serum from which the corpuscles have been filtered with sugar solution does not result in sugar destruction. Certain experiments seem to show very clearly that the black glycolytic substance is contained in the white corpuscles.

Crucial Experiment.—If a section of the jugular vein of a cow to both ends of which ligatures have been applied before its removel from the body be suspended in a cool chamber, the corpuscles separate from the serum by gravity and each of the substances may be collected separately. The reds do not act upon the sugar solution. The white corpuscles have a decided action. The glycolytic substance may be washed out of the corpuscles before the glycolytic action takes place a certain amount of disintegration must take place in the leucocyte. This would seem to confirm the fact that the glycolytic material is a ferment.

Removal of Pancreas and Diabetes.—In a number of cases it has been shown that the removal of the pancreas is followed by diabetes. This would seem to indicate that the glycolytic ferment which causes the destruction of sugar in the blood is produced by the pancreas and when this organism moves the absence of the ferment causes a lessened destruction of sugar a consequent accumulation of the material in the blood, and elimination through the kidneys. As a matter of fact the pancreatized animal destroys less sugar than the animal with a pancreas. On the other hand the ordinary digestive ferments supplied by the pancreas have no action upon the sugar. Extracts of the whole pancreas will destroy sugar if hemoglobin is also present. A perversion of sugar destruction gives glycosuria. It seems probable then that the portions of the pancreas connected with the physiological destruction of sugar are not those associated with ordinary digestion.

The Islands of Langenhans.—Opie and Steele and others in this country, besides European observers have shown that in cases of diabetes certain groups of pancreatic cells are practically invariably degenerated. These cells are not connected with the pancreatic ducts, but no the contrary are so arranged with regard to the blood-vessels as to suggest the idea of a ductless gland. There comes then as the practical therapeutic suggestion for diabetes the question of the injection of an extract of the Islands of Langenhans. In animals the injection of pancreatic extract into depancreatized animals seems to lessen the destruction of sugar.

The Suprarenal Bodies and Diabetes.—A new factor has recently been introduced into pathology and physiology of diabetes. In a certain number of reported cases of the disease, the suprarenal bodies have been found degenerated. A certain number of cases of diabetes have pigment anomalies that remind one of Addison's disease. Somehow, too, the formation of pigments in the body is associated with the destruction of sugar. The liver is the great factory and storehouse of sugar in the body and it is in this organ also that pigment formation takes place. It seems probable that the glycogen of the liver or of the muscles is affected in the circulation by certain substances found in the suprarenal bodies. It is the function of the suprarenals to discharge these bodies into the circulation. The connection of the suprarenal bodies with diabetes was investigated by four different observers almost at the same time. It is interesting to consider and makes a very curious coincidence that four different investigators working in distant places should have conceived almost at the same time the ideas of this set of investigations. To Blum appears to belong the priority of discovery.

Syphilis of the Liver.—Dr. Charles G. Stockton of Buffalo said that one of the most difficult problems in diagnosis is the differentiation of certain liver conditions. Syphilis of the liver particularly presents many puzzling cases. There is no fundamental difference between acquired and inherited syphilis. General enlargement of the liver accompanied by perihepatitis seems to be an effect of toxins rather than that of infectious material and this diffuse hepatitis is due to the presence in the blood not of the micro-organismal cause of syphilis, but of its irritating products. Gummata and other localized syphilitic lesions of the liver are due to the actual presence of microbes. The avenue of invasion seems to be through the lymph-stream. Hence gummata occurs especially at the periphery of the liver. At times, however, gummata of the liver obliterate the veins and may produce very serious symptoms.

Diagnosis of Syphilis.—The diagnosis of syphilitic conditions of the liver depends on the size of the organ which is apt to be considerably enlarged when the syphilitic affections exist on the roughness of its surface, and the irregularities noticed in the edge and outline of the liver and in the case of perihepatitis by the friction sound that may be felt or heard. The size of the liver in syphilitic affections may be extremely large. Dr. Stockton has seen cases in which the lower edge reached down to or below the umbilicus and localized enlargements may give very considerable protuberances. The differentiation from cirrhosis of the liver is not difficult, when the liver itself is palpable; but when ascites exist in the abdominal cavity it may be impossible to feel the liver, or to make out even its general size. There are other symptoms common to cirrhosis and syphilis of the liver and as the two affections are apt to occur in men with a certain freedom of living in their history their differentiation may not be so easy as might be imagined.

Syphilitic Hepatitis.—Dr. Stockton gave the details of a case of syphilis of the liver occurring in a bartender, forty-five years of age, who complained of sore throat and dyspnea and a tender and swollen wrist. There was a history of rheumatism in the case. Considerable ascites existed, but the liver was markedly increased in size. The patient was put on a gram of potassium iodide three times a day and inunctions of mercury. As his bowels were not freely moved, notwithstanding the use of the mercury sodium phosphate was recommended each morning. At first the fluid in the abdominal cavities increased for some time. Liver dulness extended from the level of the nipple to that of the navel.

The inunctions of mercury were continued, but the collection of aseptic fluid did not cease. Finally pressure symptoms required the withdrawal of 3,000 c.c. of fluid. After this, however, the continuation of specific treatment led to a decrease in the size of the liver and the fluid in the abdomen did not reaccumulate.

Case with Contrasting Features.—A man in middle life complained considerably of pain under the ribs on the right hand side. He lost thirty pounds in weight, suffered severely from night-sweats and insomnia and advancing weakness. There was a sense of fulness in the right hypochondrium that became more and more discomforting. The liver dulness extended downward to a line drawn on a level with the navel. Owing to the loss of weight the night-sweats and the febrile condition, a suspicion of tuberculosis was aroused and the tuberculin test was tried. Five milligrams of tuberculin gave a sharp rise of temperature, but not sufficient to indicate a severe tuberculous process. Eight milligrams were employed with even less results. Ten milligrams were then injected without reaction. It was decided that the case was not tuberculous. The slight reaction to tuberculin was considered characteristic of syphilis for this type of reaction has been noted a number of times in such cases. The patient was given potassium iodide and at once began to improve.

Denial of Syphilitic History.—In another patient Dr. Stockton met with an emphatic denial of all syphilitic history. There was a palpable tumor in the right hypochondriac region, evidently connected with the liver. This tumor could be seen above the skin and was about the size of a baseball. It was evidently attached to the right lobe of the liver. There was considerable constitutional disturbance, some dyspeptic symptoms, some loss of weight and some rise of the temperature. Notwithtanding the absence of syphilitic history, specific treatment was tried and the patient began to improve at once. It seemed clear *then* that hepatic syphilis in various forms is more common than has been thought. The practitioner must be on the lookout for the affection, for its treatment is one of the most satisfactory in the whole range of medicine, and a well-grounded suspicion of its existence must be the signal for the institution of specific treatment.

Emphasis as to Frequency.—Dr. William Osler of Baltimore said that the subject of syphilis of the liver is of great intrinsic importance and deserves frequent emphasis. Visceral syphilis is much more common than might be gathered from the text-books or medical journals. It is no credit to the practitioner to discover it, it is always a disgrace to miss it. Syphilis is a disease which should be treated by the family practitioner and not by the specialist, for it is only the family physician who can follow the patient up from year to year, realize the possibilities of infection, properly protect the other members of the family and recognize the first symptoms of subsequent syphilitic complications. Dr. Osler has had practitioners say that they had not seen cerebral syphilis in ten years. This means neither more nor less than that they have not recognized cerebral syphilis in ten years.

Varieties of Liver Syphilis.—These are of four kinds in Professor Osler's experience. There is first hepatic syphilis of the congenital type, which is rare and nearly always overlooked. This form of the affection may not appear until comparatively late in life. Dr. Osler's two most recent cases were in a boy of eleven and a girl of twenty-one. Syphilis of the liver in the adult occurs in three groups. The first form may develop not unlike the ordinary alcoholic cirrhosis of the liver. The men with a syphilitic history are apt to be those who have also a history of alcoholism. Because a man is a hard drinker and has a liver affection, do not overlook the inquiries for syphilis. Because a patient has the Godolphin facies with ascites, it may not enter into the physician's mind to ask about syphilis. In such a case purgation and other ordinary treatment may be followed by relief of symptoms until perhaps the patient returns with a diagnosis of his affection written on his back in the shape of a syphilitic rupia.

Syphilitic Cirrhosis and Tumor.—This form of syphilitic affection usually gives an enlarged irregular liver. Ascites may be extreme and so the liver may appear small. At times there is an actual decrease in size of the liver. In such a case the existence of symmetrical nodes upon the shins may prove the basis of the diagnosis. Such cases may have been tapped several times before the discovery of syphilitic symptoms. Once specific treatment is instituted, however, the trocar is no longer needed. It must not be forgotten that Nature heals many cases of hepatic syphilis and that many come to the autopsy table unrecognized. Great care is needed not to miss these cases.

Solitary Tumors of the Liver.—The third group consists of tumors of the liver, usually solitary but sometimes multiple yet always distinct. There may be great enlargement; the tumor may be as large as two fists. One of the most satisfactory things in the practice of medicine is to see such a tumor melt away completely under the use of mercury and the iodides. It is in such cases particularly that the diagnosis of carcinoma of the stomach is likely to be made. Dr. Osler recently saw a case in a young man of thirty-three who presented a distinct tumor in the right hypochondria, had lost twenty-five pounds in weight and suffered from an anemia not unlike a cancer cachexia. Under antisyphilitic treatment, the tumor disappeared, the patient gained in weight and the anemia faded. He who knows syphilis well knows it all.

Liver Syphilis and Cancer.—Dr. Witherspoon of Nashville, Tennessee, said that undoubtedly syphilis of the liver is apt to be overlooked. It is apt to be mistaken for cancer. The patient's history will simulate that of cancer very closely in many cases and the condition of anemia that develops, resembles not a little the cachexia of cancer. There is apt to be moderate enlargement of the liver in the secondary stage of syphilis, but later an insidious enlargement occurs that may reach extensive proportions. Ascites may develop to such an extent as to make it impossible to palpate the liver. The rough edge of the organ will often be felt, however, in the umbilical line. Not infrequently a budding mass is encountered in the right hypochondrium that is sometimes difficult of differentiation from a distended gall-bladder.

Intestinal Obstruction and Syphilis.—In a case under Dr. Witherspoon's care the patient suffered from ascites and then developed symptoms that seemed to point to obstruction of the bowels. At the operation a thickened peritoneum was found through a hole in which the bowel had dropped and become obstructed. Whenever in a case with syphilitic history, symptoms of obstructions of the bowel occur, antisyphilitic treatment should be employed before operation is done. Dr. Witherspoon believes in the use of the iodides and mercury together in suspected visceral syphilis and has never obtained good results from the iodides alone. The combination of these remedies cures the anemia and other symptoms due to the syphilis, but will not always have an effect upon the contractile tissue that forms in the liver as the result of the syphilitic process.

Febrile Temperature in Syphilis.—Not infrequently visceral syphilis is accompanied by marked constitutional symptoms. Of these rises in temperature are most frequently seen. In a recent case, the patient showed very large retroperitoneal glands. As the cervical and axillary glands were also enlarged, the case was thought to be Hodgkin's disease and the temperature was considered due to that affection. With this diagnosis the prognosis was absolutely unfavorable. Dr. Witherspoon prescribed arsenic. The patient at first grew better and then worse, as is not unusual in Hodgkin's disease, but no definite improvement was secured. He then came into the hands of a brother practitioner who gave antisyphilitic treatment and all the symptoms cleared up. The painful conditions sometimes spoken of as syphilitic rheumatism are annoying and obstinate to all treatment except the specifics. When obscure painful conditions occur in a patient with syphilitic history it is always advisable to try specific treatment.

Preliminary Tonic Treatment.—Dr. Richard Cabot of Boston spoke of the impossibility of affecting viscera syphilis favorably in conditions of run down health, until the general condition has been improved. Two soldiers of the Spanish War came under his care with a history of syphilis, but specific treatment failed of its effect until the general health had been improved by tonic treatment. Dr. Cabot is of the opinion that uremic hemiplegia and cerebral syphilis are often counfounded. In certain cases with a past history of syphilis there is a hemiplegia of gradual onset with loss of consciousness and then a fatal termination. At the autopsy a perfectly normal brain may be found and the symptoms were evidently due to an uremic condition.

Diagnosis of Syphilis.—Some years ago Dr. Cabot attempted to confirm the supposed discovery of the German observer who claimed that the existence of latent syphilis might be recognized by the fact that the administration of mercury by inunction caused a great decrease in the hemoglobin of the blood. This was supposed not to occur when syphilis was not present. No such distinction of the reaction exists and the therapeutic test in this form has not of value as a diagnostic sign.

Unreliability of Negative History.—Dr. Howard Fussell of Philadelphia said that a negative history of syphilis is an absolute unreliable guide for the physician in many cases. The therapeutic test is often successful when there is no history of primary sore or secondary symptoms. Many people are extremely careless in their observation of their bodies. In a recent case in dispensary practice, there was typical syphilitic sore throat. Dr. Fussell could obtain no history of syphilis, primary or secondary. He asked particularly with regard to the occurrence of rash on the body. The patient denied absolutely any such symptom. On being stripped however, there was found a typical syphilitic roseola of the presence of which the patient had been absolutely ignorant.

Mixed Treatment in Infants.—Dr. Fussell said that he had two recent unfortunate experiences with mixed treatment in infants. He scarcely knows whether to attribute them to coincidence or to some irritating chemical combination. While using inunctions of mercury in a syphilitic child, with the relief of many symptoms, he employed small doses, one grain three times a day, of potassium iodide and the result was a furious enterocolitis. The potassium iodide was stopped and the colitis became less severe. Considering the accident not due to the remedy, he employed the same combination in a subsequent case with still worse results. The infant, who was in delicate health, succumbing to the combination of enterocolitis and the symptoms due to its syphilis.

Syphilis of the Lung.—Dr. Hoover of Cincinnati said that he had been very much impressed by the autopsy on an American medical student in Vienna who was supposed to be suffering from galloping consumption. The patient was under the care of Professor Nothnagel who sent him to Switzerland where he did not improve. The cause of death proved to be syphilis and not consumption of the lung. Dr. Hoover has seen two cases in eight years in which there were fever, night-sweats, loss of weight, but no tubercle bacilli in the sputum. Ordinary antituberculous treatment failed to give relief but specific treatment proved effective at once.

Antisyphilitic Treatment at Johns Hopkins.—Dr. McCrae of Baltimore said that the usual treatment for visceral syphilis at Johns Hopkins is a combination of potassium iodide and inunctions of mercury. Mercurial inunctions are continued for one month and potassium iodide is used in 20-grain doses three times a day for six months. Improvement is usually marked in five weeks and at the end of two months usually all the symptoms are relieved.

Absence of Syphilitic History.—Dr. Walsh of New York said that in many cases the denial of syphilitic history can not be taken as a guide for therapy. Neurologists have come to recognize this fact and give antisyphilitic treatment wherever there is a degenerative condition of unknown causation. In one case recently under Dr. Walsh's care the patient with an intra-abdominal tumor had been told by one of the best surgeons in the country that his only hope was an abdominal operation for what seemed to be a malignant growth and that even that gave no good prospect of lasting relief.. There was no history of syphilis in the case, yet a trial of antisyphilitic remedies not only stopped the growth of the tumor, but at once relieved the constitutional symptoms that were developing.

Visceral Syphilis and Obscure Fever.—Dr. Futcher said that visceral syphilis, according to records of Johns Hopkins Hospital, was responsible for 20 per cent. of cases of fever of obscure origin. This fever may occur late in syphilis, or early in the secondary stage. Three typical cases have been recently reported. Sydney Phillips gave the details of a case of intermittent fever that lasted for eight months and was absolutely indistinguishable clinically from tertian malarial fever, having the sweat and chill regularly every second day. Some years ago, Janeway of New York reported a series of cases that had been sent to the Adirondacks because of the existence of syphilis.

Jaundice and Cirrhosis.—Dr. Stockton, in closing the discussion, said that when jaundice occurs with apparent alcoholic cirrhosis, especially if accompanied by cachexia, it is well to suspect syphilis. There may be enlargement of the liver without ascites. Jaundice may or may not occur. Tonics alone will not improve syphilitic cases unless specific treatment is also employed. When malaria exists in the case, this must be treated separately.

Errors in Cardiac Diagnosis.—Dr. Richard C. Cabot of Boston discussed the relative frequency of failure of diagnosis in the different cardiac regions. It is not an unusual thing to have heart lesions diagnosed and yet the valves found healthy at autopsy. Dr. Cabot has recently seen three cases in which aortic regurgitation seemed to be present, yet the aortic valves were found absolutely normal postmortem.

Treatment of Croupous Pneumonia.—Dr. E. Fletcher Ingalls of Chicago reported the cases of croupous pneumonia under treatment at Cook County Hospital during the past year and stated that the mortality was about 36 per cent. Thirteen of the patients, however, died on the day of their admission and scarcely deserve to be considered as having been under treatment. This mortality leads clinical pathologists to doubt entirely the efficacy of drugs in pneumonia. It is probable, however, that care and proper nursing do have a beneficial effect in reducing the mortality from pneumonia.

Useful Drugs.—The usual drugs for the beginning of a pneumonia are calomel and if the patient be in pain and inclined to be restless opium should be ordered. Very early in the case, digitalis and strychnine are commonly employed in order to stimulate the heart to its best efforts. When much of the lung is involved in a pneumonic process oxygen is of service. With regard to external applications, patients in their ordinary clothing and without cotton-batting or poultices, seem to do quite as well as those with whom more care in these applications is taken. Liquid diet is important and the patient's general condition must not be allowed to run down because of the lowering of resistive vitality that results. On the other hand the overloading of the stomach constitutes a very serious danger in the disease, because of the possibility of mechanical interference with the heart action. Leeches or dry cups may be used with advantage in sthenic cases and seem to limit the extent of the inflammation. Opium must be used with care as it checks the secretions and undoubtedly has hurried many a pneumonia patient to death. For the cough of pneumonia, ammonium bromide in 10-grain doses every five or six hours, with some hyoscyamus, seems to be the best remedy. Ammonium bromide serves to relieve the insomnia.

Possible Specifics.—Many drugs have been recommended as specifics for pneumonia, but few have fulfilled expectations except in their inventor's hands. One observer has treated seventy cases with sodium salicylate without a death. Eight grams of the drug per day were employed. Some of the patients were in very unfavorable conditions. No unpleasant symptoms were noted except some buzzing of the ears. The number of pneumococci present in the sputum gradually diminished and eventually disappeared.

Puncture of Lung.—Dr. Barnett of Wisconsin said that not long ago puncture of the lung had been suggested for delayed resolution in pneumonia. By mistake in the case of a child delayed resolution was taken for pleurisy and a trocar inserted into the lung. Though the lung had been solid for a month, resolution at once began and continued until complete recovery.

Awful Mortality of Pneumonia.—Dr. Osler said that it is terrible to realize that physicians listen with mute, impassive faces to the announcement of 36 per cent. of mortality in pneumonia. Nothing has been done to make the disease less fatal and it continues to deserve the most careful study of clinicians in the hope of modifying fatality to any extent. Dr. Osler would like to know what the mortality of pneumonia in the homeopathic departments of certain of the city hospitals might be, for surely it can be no worse than that under the care of the regular physicians.

Suddenness of Complications.—Dr. Wells of Chicago said that the pneumonia death-rate has been the same for as long as the disease has been recognized. Suddenness is the characteristic of the disease in every way. It begins with a chill and ends by a crisis. The only hope of saving patients is by almost constant attendance. Changes are so unexpected that in a few hours patients may well pass into a stage in which they are beyond help from drugs.

Epidemics of Pneumonia.—Dr. Cunningham of Alabama said that during a number of years he has had medical charge of 600 prisoners in Alabama and has seen a number of epidemics of pneumonia. The disease occurred in groups of fifteen to twenty cases, though in one instance nearly a hundred cases occurred. The mortality in these various epidemics was from 10 to 60 per cent. and the average was about 35 per cent.

Gastroptosis.—Dr. J. Dutton Steele of Philadelphia gave the analysis of 65 cases of gastroptosis and said that the affection is much more common than is usually supposed. It is very common in women, not only among multiparæ, but also in young nulliparæ. It occurrs, however, also in males. When the sagging of the stomach is marked it is not easy for the gastric muscle to force food up over the curved pylorus. This adds still further to the condition by causing stasis of the stomach-contents. Not infrequently the transverse colon is forced down into a V-shaped form and, as a consequence, constipation occurs. In women the gastroptosis seems to be due to a primary relaxation of the tissues. In men, not infrequently, the dilatation of the stomach is the primary condition.

Neurasthenia.—Neurasthenia favors sagging of the stomach, but in Dr. Steele's experience does not seem to stand in a direct causative relation. The gastro-intestinal disturbance that follows gastroptosis emphasizes the neurotic symptoms that so frequently exist in patients of the relaxed fiber that are predisposed to gastroptosis.

Treatment of Gastroptosis.—In Dr. Steele's experience the use of an abdominal belt relieves the symptoms and gives such benefit as to be practically curative in some cases. Beyea's operation, the shortening of the hepatic ligament, gives excellent results in severe cases that are not relieved by the wearing of an abdominal belt.

Results of Operation.—In discussing Dr. Steele's paper, Dr. Beyea of Philadelphia said that in two cases the shortening of the gastrohepatic ligament has done away with all the symptoms of gastroptosis. One of the patients was operated on about twenty months ago and has gained twenty-five pounds and continues in good health. The other was operated on over a year ago and has gained nineteen pounds in weight.

Laxity of Fiber.—Dr. Stockton said that gastroptosis not infrequently accompanied by floating kidney and ptosis of the liver also. These conditions occur in patients of fragile tissue and surgeons often find it difficult to secure proper tissues for the holding of sutures.

Dr. Boardman Reed said that undoubtedly the dress of women favors gastroptosis and accounts for its greater frequency in this sex. An abdominal belt will relieve the symptoms and with hygienic measures will restore the patient to good condition. Dr. Fenton B. Turck said that an abdominal belt does not raise the stomach as has been shown by examinations with the X-rays. Gastroptosis is due to lack of motor power and for the improvement of this stimulation of the circulation is needed. The muscles of the stomach wall can be exercised by injections of air either directly or in a rubber bag.

In closing the discussion Dr. Steele said that the stomach has been observed to be in a different position after the application of a properly-adjusted belt.

Etiology of Rheumatism.—Dr. George Webster of Chicago reviewed the etiology of rheumatism and concluded that the affection is surely of micro-organismal origin, but may be due to a series of bacteria rather than one. It seems not improbable that an hereditary diathesis may predispose to the occurrence of rheumatic affections. Coldness, dampness, exposure and so forth are the occasion, but not the cause of rheumatism. Alkalies seem to increase the bactericidal power of the blood hence the use of these remedies in rheumatism.

Chemical Basis of Rheumatism.—Dr. Heinrich Stern of New York in discussion said that the chemical basis of rheumatism seems to be a disturbance of the equilibrium of the calcium salt in the joint tissues. The white fibrous tissue beneath the serosa of the joints is especially rich in these salts and the dissolving of these substances seems to cause the joint symptoms.

Prophylaxis of Cardiac Rheumatism.—Dr. Joseph M. Patton of Chicago said that cardiac manifestations of articular rheumatism seem to be an essential part of the disease in many cases and the important element in prophylaxis is the insistence on absolute rest during the course of the febrile rheumatic condition. Not only the valves and the pericardium are attacked in rheumatism, but also the heart-muscle itself, and it is in these cases particularly that fatal heart complications occur

Acute Rheumatism at Johns Hopkins.—Dr. Thomas McCrae said that 25 per cent .of the patients had a family history of rheumatism. Forty-five per cent. had previous rheumatism. Only 3 per cent. had tonsillitis and a still smaller number chorea, which is opposed to the experience in London. Three-fourths of the patients were under thirty, but many were over forty, though there are those who say that rheumatism does not occur at this time. In twelve per cent .of the cases there was exposure to cold and dampness. In one trauma was the occasion for the rheumatism. The average duration of the disease was about thirty-eight days—a confirmation of the opinion that "six weeks" is the best thing for rheumatism. There were three deaths in 270 cases. One-third of the patients had fever of lower than 103° F. Under twenty years of age, 44 per cent. of the patients developed organic heart trouble.

Salicylates in Acute Rheumatism.—Dr. James J. Walsh of New York said that the salicylates are not specifics, but the best symptomatic remedies. When delirium develops they must be employed with care. The best substitutes are the other coal-tar products, especially antipyrin and phenacetin. The salicylates must be employed in doses of about 100 grains a day and other coal-tar products in almost as large amounts. Many cases that fail to respond to the salicylates are not true rheumatism, but gout or hysterical joints, or syphilitic arthritic conditions.

BOOK REVIEWS.

PSYCHOLOGY, NORMAL AND MORBID. By CHARLES A. MERCIER, M.B., M.R., C.P., F.R.C.S. The Macmillan Company, New York.

THIS, we believe, is the first serious attempt in the English language that promises to be of service to link the study of psychology to psychiatry.

Dr. Mercier has long been known as a singularly felicitous exponent of common-sense views regarding mental activities. His earlier work has proven the source of much inspiration to the younger workers in psychiatry in this country and the present volume is one that merits high praise and careful study.

The purposes of his present work are most admirably set forth in his preface from which we quote: "It has long been a tenet of mine, and there are now, I think, others who hold it, that insanity is no exception to the rule which requires a knowledge of the normal as an indispensable preliminary to a knowledge of the abnormal. . . . Of the many excellent works on psychology which are at the service of the student, there is none that affords him material help in understanding those disorders of the mind which it is the work of his life to study." It is from this point of approach that Dr. Mercier has written this extensive and most thorough treatise.

On the standpoint of his own frame of mind one delicious bit may be plucked bodily from his work. "In examining once more, from a new point of view, those great and fundamental problems which have engaged the attention of so many of the profoundest thinkers for so many generations, I may incur the accusation of presumption of which I have often seemed to myself to be guilty; but in this I take comfort from the thought that in attacking opinions which seemed to be unsound, I should have been false to their own ideal had I allowed myself to be deterred by reverence for the great thinkers who have explored these fields before me. When I have applied the forceps of argument to some carious belief, I have endeavored to handle it tenderly, as if I loved it. I have myself suffered too much in the penitential chair not to sympathize with him who is in the agony of the extraction of some deep-fanged bicuspid belief, which he has fondly taken for a *dens sapientiæ*." Certainly such sound humor and sympathy augur well for the discussions which follow.

We venture to predict that this work will help the study of psychiatry more than any recent modern treatise.

A TREATISE ON SURGERY BY AMERICAN AUTHORS. For students and practitioners of medicine and surgery. Edited by ROSWELL PARK, M.D., Professor of Surgery in the University of Buffalo, N. Y. New (3d) edition in one royal octavo volume of 1350 pages with 692 engravings and 64 full-page plates in colors and monochrome. Lea Brothers & Co., Philadelphia and New York.

THE title of this volume is significant. It has been prepared for those who practise not one but *both* branches of the healing art. While distinctively a surgery and replete with the most recent technic and clear to an unusual degree in the details of surgical anatomy, it is universally just in giving medical treatment proper space and due. Nowhere in the book do we notice the oft-quoted surgical adage that medicine consists of four things—rest, food, stimulation and iodide of potassium. In the chapter on the genito-urinary system the varied sides of the medical treatment of certain cases is admirably given. This is a factor which will make the book of the very greatest value to all. Another point which strikes one as of a most modern and progressive turn is the tendency to drop the use of men's names in discussing characteristic groups of symptoms or certain diseases. For instance, in exophthalmic goiter—where incidentally Jonnesco's newest modification of his operation on the cervical sympathetic is most fully and interestingly given—Graef's sign, the failure of coordination between the movements of the lid and the eye, is described, but the discoverer's name is omitted.

In the matter of illustrations the volume is particularly rich; many of the X-rays and monochromes being a distinct addition. There are a few, however, which are crude and others which are out of place. Some examples of the first are to be found in the chapter on orthopedic surgery; notably on page 723. where a wretched attempt is made to picture Sayre's jury mast. On page 556 is sketched the famous case of Moraud, 1753, to show the lesions in osteomalacia. *Vis a vis* osteopsathyrosis is similarly presented. These rare conditions have no interest either to the student or to the practitioner. They are entirely out of the domain of practical surgery or medicine; they are of purely teratological interest and should have been excluded from an otherwise modern book.

But such criticism on this magnificent tribute to American authorship and American bookmaking, for Aldine himself would have been proud to make such a volume, pales before its general worth and beauty. True, the ideal surgery has yet to be created, but in Park's Third Edition it has all but been achieved.

BOOKS RECEIVED.

The MEDICAL NEWS *acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the* MEDICAL NEWS *will shortly appear.*

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Vol. XIV.

MINOR SURGERY AND BANDAGING. By Dr. HENRY R. WHARTON. 8vo, 620 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York.

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